BRITAIN'S BIGGEST AND BEST-SELLING AMIGA MAGAZINE

AMIGA
FORMAT

ISSUE 20 ■ MARCH 1991 ■ £2.95

IF ONLY THERE WAS SOMEONE WHO COULD TELL ME WHICH SOFTWARE TO BUY!

COVER DISK

20

AMIGA FORMAT

The Power
Intriguing playable puzzle levels will keep you entertained and absorbed in The Software Business' cracking new mind game

Interphase Fix
At last you can save Interphase games!

Script 4D
Create Sculpt-Animate animations easily

MakeAuto
Boot any program you want at start-up

Pic of the Month
Why does this make me think of Holland?

InstallPrinter – Makes choosing a printer simple
Read_Atari – Use Atari ST disks in your drive…
Conv_Scan – …and use ST Degas format pics in your Amiga paint program

Documentation on Page 15

NO COVERDISK?
THEN ASK FOR ONE FROM YOUR NEWSAGENT

GET THE ANSWERS
WITH OUR NO-NONSENSE GUIDE TO WHAT TO BUY AND WHAT TO STEAL IN: GRAPHICS, WORD PROCESSORS, DTP, MUSIC, VIDEO, FINANCE, SPREADSHEETS AND DATABASES

NEWEST GAMES: MiG 29, Team Suzuki, Lemmings!
● ATTACK OF THE SEQUELS: Speedball 2, Gazza 2, Turrican 2 ● FIRST REVIEWS: HAM animation with Spectracolour, Disney Animation Studio, DTP heavy-weights Professional Page 2 and Pagestream 2

Hints, tips and advice galore
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Gamebusters p95
Beginners p173

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It's not all fun...
Getting the best out of your Amiga is not always easy, but our great software guide will help answer your questions. Graphics, Music, WP, DTP, Video, Databases and Finance are all demystified, starting on **p23**

WHAA

...and Games!
Fast and furious action rides again in Speedball 2, Turrican 2, MiG-29, Hunter, Team Suzuki and Lemmings.
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REVIEWED

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THE POWER – You're bound to be hooked by this excellent puzzle game from Software Business.

INTERPHASE FIX – Adding that vital element to our January complete game: the Save option.

INSTALLPRINTER – It's good, it makes using printers easier, it was bugged, now it's fixed.

MAKEAUTO – Pinching a feature from Workbench 2, this lets you run stuff at start-up.

READ_ATARI – Get data from an ST disk…

CONV_SCAN – …and pinch pics from the ST.

SCRIPT4D – Makes Sculpt animations easier.

PIC OF THE MONTH – Dutch delights.

COVER DISK **20**

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CDTV...

Launch Soon

- **Lower price is possible**
- **Field tests start soon**

This is the production version of the CDTV, not a prototype. The striking change is to the remote control unit, which follows the pattern of many new video recorder remotes but is also stikingly reminiscent of a console 'joypad' games controller.

Commodore's official retail launch of the CDTV 'interactive graphics player', an exciting cross between an Amiga, a video recorder and a CD player, in the US (see Las Vegas report, right) will be reflected in a UK launch shortly. 'Full-scale volume production' will begin at the end of March and we expect to see the machine hit the shops in the UK at the end of April.

As for software, 45 discs are set to be ready when the machine goes on sale. Speculation is now rife as to the pricing – while the CDTV is currently marked at $999 in the US and £699 in the UK, weekly trade magazine CTW reported (21st January) that pressure is on to bring the price down to £599, which would make "a hell of a difference" to sales.

This is an important point, because Commodore need desperately to ensure the CDTV has a great impact on the buyer. High-street retail chain Dixons, which will stock the machine in around 100 of its stores, agrees that the lower price would help. Dixons' confidence in Commodore has been aided by the great strength of Amiga sales over Christmas.

The first machines arriving in the UK will be sent out for field test, so we are even now selecting five testers from applicants to *Amiga Format*'s 'Be a tester' offer in Issue 16. Those chosen will hear in about a week's time (this issue goes on sale Feb 14th) and should be in possession of one of only 20 or so machines in the UK in a matter of days. In Issue 21 we will be pursuing the details of the 45 promised CDTV titles and bringing the latest news of the CDTV.

CDTV will have 45 titles available at launch: as revealed in *AF*'s guide to software under development in Issue 16, *Herewith the Clues* and *The Case of the Cautious Condor* will be right there in the vanguard.

...Launched in US

JOHN MINSON reports from the Las Vegas CES

This is the industry's biggest event and this time CDTV stole the show, inspiring confidence that it really is happening. No fewer than 45 CDTV titles are scheduled for launch in 1991 and thirty-five discs were on the stand, most either complete or within a month of a release version.

They ranged from CRL's disc of antique, animated, naked ladies taken from Eadweard Muybridge's classic photographs – all in the interests of art, of course! – to Digita's *Dr Wellman, Family Medical Advisor* and Mirrorsoft's excellent *Xenon II*.

Also on the educational front, Discis' programs for young children brilliantly demonstrate CDTV's potential. Ostensibly it is a 33-page kid's story book, but clicking on words or objects on the accompanying picture gives their pronunciation and words can be heard in different languages.

The medium is proving a blessing for games software houses whose product is outgrowing the capabilities of floppy disks. Sierra already has special high-resolution graphics versions for the IBM PC which require eight or more 1.44Mb disk, but *Space Quest III*, the company's first CDTV adventure, can be stored on a single CD.

Spectrum Holobyte's renowned F-16 simulator *Falcon* will be flying in on CDTV, though company boss Gilman Louie is slightly cautious: "It's a nice machine but the problem is to get enough of a niche to control the market place. I wish it luck." Interplay has also taken the opportunity to further enhance the animation and effects in its classic *Battlechess*.

Continuing the military note, Dominion has rushed out the CD equivalent of the coffee table book for weaponry enthusiasts. *Advanced Military Systems: Crisis In The Gulf* contains action photographs of all those macho killing machines. On a more peaceful note, Guinness is promising the *Book Of Records* for the system.

Mystery adventures seem popular. Tiger Media showed off their real-time thriller set in the 30s, *The Case Of The Cautious Condor*, featuring three hours of audio track. Icom Simulation's *Sherlock Holmes, Consulting Detective* was a late arrival but with its icon drive commands and partial screen animation it looked far from elementary. And our own Domark will have two Dennis Wheatley puzzlers, *Herewith The Clues* (developed by CRL) and *Murder Off Miami*.

AMIGA CD-ROM DRIVE A REALITY!
Speculation has been rife as to whether Amiga owners will be able to benefit from CDTV software – and it seems they will. The Amiga CD-ROM player was still in late-prototype form but will provide full CDTV facilities, apart from the remote control, and should ship in June with an estimated retail price of $699.

CD RECORDER
White goods manufacturer Kenwood was showing a home, record-once CD machine. Though initially meant for audio and possibly hampered by the high cost of disks, around $90 a time, if offers exciting potential for anybody wanting to develop for the medium.

MIDI CODE ADDED TO AUDIO CDS
An exciting development for musicians is the inclusion of MIDI code in forthcoming Warner audio CDs, meaning that the instrumental track can be separated from vocals and drums then modified with a compatible keyboard via CDTV's MIDI ports. Apart from its obvious Karaoke qualities, it offers potential for interactive music teaching.

Look for a big value AF in March!

Our April issue, hitting the streets on March 14th, will be hidden inside a posh plastic wallet. Why? Well, we're including a special extra – a 32-page supplement to give you a sneak preview of a brand-new magazine for Amiga owners. The supplement will include the most detailed round-up of disk drives ever undertaken as well as lots of expert advice and hints. Look out for it!

You wait ages, then three come along AT Once!

Just as we were getting the impression that the only reason people want a PC emulator is to run route-planning software, an Amiga route planner (*GB Route*, reviewed Issue 19) arrives. Then another turns up – the *Door to Door* routefinder, which covers Great Britain, includes street maps of London and costs only £19.99 (☎ Geographic Dept Transport Studies 0535 274228). Finally NextBase, originators of the whole lark with their PC-based *AutoRoute* program, tell us their new version 1.5 will run easily on an Amiga with the software-only emulator *SoftPC* (☎ NextBase 0784 460077). Phew! guess we better check them out for you next issue. As a closing note, if you want the ATOnce hardware PC Emulator, please call Silica Systems on their public number, 081 309 1111. Again, we are bringing you a review next issue.

Super Offer

A bargain £99.95 bundle offer of *Superbase Personal 2*, judged the best database in our feature on Page 33, and the spreadsheet *Superplan* has been made by Workbench PD. Write to them at 1 Buccleuch Street, Barrow in Furness, Cumbria LA14 1SR. ☎ 0229 473609 after 8pm Tuesday and Thursday

Printer Heaven

News for printer users this month includes the announcement of a new Laserprinter from Star which runs at a nippy four pages per minute but produces its first page "faster than any other 4ppm printer currently available" thanks to an Intel 80960 RISC processor (☎ Star 0494 471111). Also new in the Star range are the 9-pin LC-200 and the 24-pin LC-24-200 dot matrix machines, which Action are offering at the reduced prices of £199 and £299 respectively with a two-year warranty (☎ Action 0800 333333). Another new machine is the Epson LQ-1010 24-bit dot matrix at an RRP of £525, described by its manufacturers as "robust yet refined".

S H O W   D I A R Y

The MIDI music show, aimed at professional musicians, will be held at the Novotel in Hammersmith, London on April 26-28 (☎ Westminster Exhibitions 081 549 3444). The next All-Formats Fair for bargain hunters is at the New Horticultural hall, Westminster, London on March 23rd (☎ Mike Hayes 0457 875229) while the next Computer Shopper show, an all-round buyer's paradise, takes place at Alexandra Palace, London, on May 10-12 (☎ Blenheim Exhibitions 081 868 9933).

Pay as you Play system 'Could Kill Piracy'

A strange new way of buying software is being suggested as the answer to piracy. Mail Order firm Arcanum will sell games at a very cut-down price – £5.99 for Killing Game Show, for example – and protect it with their own lock system. Every time a player wants a game, he will have to phone a special number to receive a code.

Clearly the company expects to make its money back on the phone calls: the metered call will cost an average of about £1 for the couple of minutes needed to get the code. The benefits to the player, though, include the ability to try a game and pay no more if they don't like it, plus the chance to enter competitions, go to local gamesplayers' meetings and build up points towards free games. Arcanum may also offer players the chance to buy outright games they particularly enjoy.

Suggestions that the system would be very cheap to gamesplayers but not so cheap to their parents or employers have been raised, the reception from the software industry is currently tentative and the public tends to distrust this kind of phone system. Still, it's an interesting idea. Tell us what you think.

☎ Arcanum 061 876 0345

Games to Watch

John Minson picks the best new games at the Las Vegas CES

What's Cinemaware's secret trademark? Not state-of-the art graphics but those bodacious babes who filled out diaphanous nighties in *Defender Of The Crown* and stretched sweaters in *It Came From The Desert*. They've even found their way into the latest TV Sports release, *Rollerbabes*, a cross between roller derby, ice-hockey and pro-wrestling! Speed skating and GBH feature in a zany future sport via Mirrorsoft some time in 1991.

Interplay's thirteenth-century sim *Castles*, via Electronic Arts in the autumn, give you the opportunity to position towers, walls, even arrow slits to stregthen your stronghold and defend your domain. How hard can you work your peasants? How much can you tax them? Should you become involved in arguments between church and state? Realistic and magical scenarios are available for all would-be feudal lords.

Death Knights of Krynn is the fully-compatible follow-up to Champions of Krynn, able to load and use the same characters.

SSI fans can enjoy two new AD&D adventures in the springtime. *Eye Of The Beholder* uses the game's Second Edition rules while *Death Knights Of Krynn*, sequel to *Champions* of the same, will allow not only characters but also their belongings to be transferred from previous games. Both are for 1Mb machines and will be available from US Gold.

Write Time...

Just out is New Horizon's latest word processor, *Quick Write*. It's aimed squarely at beginners with a standard 512K single-drive A500 but is still well endowed. To find out more, read the review next issue.

...Write Place

Also new on the WP front is *Excellence!* from Micro Systems Software, the team behind the very popular *Scribble!* word processor. *Excellence!* is a high-quality high-end system with full graphics and colour support, Again, a review should give you the low-down next issue.

Confused? Join the Club!

The Questions and Answers Club (QAC) is a bizarre combination of PD supplier, user group and on-line help service. It's run by a group of out-and-out Amiga enthusiasts with a wide range of expertise who can help to solve your problems. What you do is join the club and ask your questions on a disk, which they will return to you along with PD programs tailored to your needs. Details from QAC, Deal Cottage, Bridges, Luxulyan, Cornwall PL30 5EF.

Nova PD Gone Critical

Please send no orders to Nova PD, who have ceased trading. Proprietor Philip Harris is attempting to honour all his debts: if you have a problem, please write to him at 30 Parsons ST, Banbury, Oxon OX16 8LY.

Scanner frenzy

A sudden burst of activity in the scanner market is reflected in the release of a fourth new hand-held. DAATAscan Professional from Pandaal combines Mitsubishi hardware with custom software and will compete with new products from Naksha, Golden Image and Datel. "Nothing outscans a DAATAscan" claim Pandaal: we'll see next issue in a comparative review.
☎ Pandaal 0234 855666

Gone Forth?

In Issue 13's round-up of programming languages we suggested there was only one implementation of the language Forth available. Not so. Delta Research in the States inform us that their JForth ($120) is now in its third revision with anims, animbrushes and AmigaDOS 2 support added, and that a demo of it is available on Fish disk 239. Write for further info to Delta at PO Box 151051, San Rafael, California, 94915-1051 USA.

Don't Buy Sound Express!

The sampling package Sound Express (reviewed Issue 16) is currently on the receiving end of legal action from the manufacturers of the sampler Technosound (Issue 17), New Dimensions, so we recommend that you don't touch it with a barge pole for now.

New Ninja

System 3, masters of the ancient art of kung fu adventures, have begun touting their forthcoming release *Ninja III*. It follows generically on the heels of *Last Ninja II* and *Ninja Remix*, but promises to very different. Ninja III stars larger sprites and a greater emphasis on combat than before. Most impressive however, is the animation they aim to squeeze into each and every bad guy, with certain end-of-level bosses packing over 80 frames of action into their attacks. Nunchuk' fans should get be able to get their fill in Mid-March.

Tit-bits

The *Penthouse Electric Jigsaw* is a collection of 12 digitised females in various states of undress officially licensed from men's magazine Penthouse and cut up randomly by a jigsawcreating system. The idea is that an endless number of jigsaws can be generated from the same images, so your interest won't pale, and it costs £34.95. It also comes in a tasteful version where the Penthouse Pets are wearing underwear. Ho hum.
☎ Data Liberation 0983 864674

Speedy PD

Lorenzo's PD reckon they get 80% of orders out within two hours of receiving them. Wow! As part of their service they are now offering to send a disk with their catalogue and a magazine-style thing on it, completely free, to anyone who sends back the coupon on their ad in this issue. All coupons will go in a hat for a prize draw, the prizes for which include an external disk drive, a half-meg expansion and a year's subscription to Amiga Format. Not bad, eh?

Demo Talent forms Games House

A software house with a difference has been formed – Team 17. They will produce games initially for the Amiga only, mostly for machines with over 1 Meg of RAM. The first two titles will be a beat-em-up, *Full Contact*, and a shoot-em-up, *Alien Breed*. Team 17 are bullish about their ability to exploit the Amiga fully because they already have a proven track record as demo writers on the PD circuit. The writing squad has been drawn from the ranks of Europe's finest demo crews.

SKATEBOARD JOY

Cheetah's new skateboard joystick, Aeroskate, was launched at the Las Vegas CES. Skate fans will be able to buy the basics and stick their own board on top. It promises to suit ski and skate games well, but French software house Titus are supposed to be working on a series of games geared towards the Aeroskate. Cheetah are also working on a couple of bizarrely-shaped 'sticks', the 'Bug' and the 'Ninja Tortoise'.

ON THE DISK

THE POWER P.15

A testing puzzle game with a meaty sound-track, *The Power* is a worthy sucessor to Demonware's previous release *Oops Up*. It uses both European (PAL) and American (NTSC) systems to the full.

FIXINT P.17

A clever little patch program to make the *Interphase* game on AF20's Coverdisk load and save games correctly. Shaune Beattie is the man to thank.

INSTALLPRINTER P.17

So many people had problems getting this to work last month that a new version is on this disk. Makes installing a printer driver so much easier. Smiddy strikes again.

MAKEAUTO P.17

If you have trouble getting programs to load straight onto your Workbench, this handy utility automates the process. Mark Smiddy simplifies the Amiga yet again.

PIC OF THE MONTH P.17

Steve Michel shows you the quality and subtlety of Amiga graphics – and what a windmill looks like, for those who have never seen one.

READ_ATARI P.16

Lots of people get mighty frustrated when they try and find a way of loading in files from an Atari ST. This does just that – and *Conv_scn* will convert graphics files to Amiga format. Written by Mark Lawrence.

SCRIPT4D PXX

SculptAnimate 4D is one of the most complex pieces of software available. Specifying routes and paths for ray-traced objects to follow is not easy without this handy scripter. Richard Swingwood authored this one.

GETTING STARTED

Oh come on! Just stick the disk in the drive when the picture of the hand with the Workbench disk appears. A menu will appear, with details of the bits that will work straight from the disk. *MakeAuto, Script4D Read_Atari* and *InstallPrinter* need some work on the your part to get them working – so read these pages carefully.

COVER DISK

Starring an excellent new puzzle game with one of the best soundtracks around, this month's disk also includes a stack of handy utilities. PAT McDONALD gives you the instructions...

THE POWER
DEMONWARE

Of the different game option available in The Power, Arcade is the standard version and uses the whole screen as a playing area – and that's a whole PAL or NTSC screen. What value!

The course of true love never ran smooth – in this game it's a positive quest. You play a Cute Little Fuzzball who has to travel around, collecting the hearts around the screen and then meeting up with your girlfriend. (What? No boyfriend option for Amigettes?)

The problem is, once started on a course your CLF will continue until blocked. The idea is to work out a route around the screens without getting stuck.

To change any of the game options from the starting screen press the red buttons on the screen – take a look at the picture on the next page.

There's a wide choice when it comes to methods of control. You can either use a joystick, or a mouse, or even one of the two possible keyboard combinations – the Key 1 option uses the cursor keys and Return as a joystick, while Key 2 uses the numeric keypad to move the pointer around and the cursor keys to move in the relevant direction.
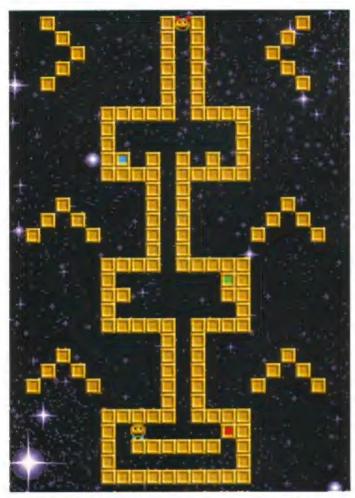
Joystick is probably the worst way to control the CLF. Move the pointer (a flashing, star-like object) with the stick to the CLF. Press the firebutton down and push the joystick in a direction: a blue arrow appears pointing the way.

Let the firebutton go and you'll start moving in a straight line.

Using a mouse is much the same as using a joystick, except that the cursor doesn't go whizzing off when you let go of the left mouse button. This is by far the easiest control method! One point to bear in mind is that diagonal movement is not allowed, which can make the game tricky.

Tactics

Either one or two players can have a go. There are three modes (which are changed by clicking on the MOD button) as follows:

Tactical will fit the whole playing area on the screen, which makes the later levels less of an exercise in scrolling the screen.

Arcade: This only allows for one person to play at a time, and uses the whole of your screen as one big playing area.

Tac: Useful if you want to see more of the screen at one time (good for the later levels when they don't all fit on the screen in Arcade mode). Again, only one person can play at a time.

Knockout: This pits two players in a battle to complete the screen first. Note that the first player to win on three levels is declared the overall winner.

From Level Three onwards, blocks appear. These can be pushed around the screen just like the CLF, and are needed in order to complete the level. Be warned that pushing different coloured blocks over one another will destroy the non-moving block. A lot of thought is needed to get the

order of movement right. There is a total of five levels on the Coverdisk demo. Each one has a code so that you can go straight to it. This is why you're asked at the beginning of the game to enter a code – just click on the down arrow to start on Level One.

What else can I say? It's fiendishly difficult, addictive and stylish – in case you didn't realize, the sound track is *The Power* from Snap. I've got to Level Five, but have yet to complete it. Can you?

AMERICAN OK

Two versions of *The Power* have been included on the Coverdisk. One is for European (PAL) Amigas, the other works with American (NTSC) Amigas. So for once everybody can enjoy the AF Coverdisk!

SCRIPT 4D
RICHARD SWINGWOOD

Script4D was created to ease the pain of creating animated sequences using the *Sculpt 3D/4D* range of software. If you've never heard of them, suffice to say that *Sculpt* is a very powerful graphics tool for creating pictures of 3D worlds that you can design. It's also hideously complex, expensive and not without its flaws.

One of these flaws is defining animation sequences. *Script4D* will take a written description of an animation and will produce a script file suitable for loading into *Sculpt*.

Full instructions are on the Coverdisk. To get it working properly, you'll need to copy the *Script4D* program file to your c directory (instructions as for *Read_Atari:* as most people who have *Sculpt* will already know how to do this, I'll not wibble more except to say that the relevant files are all in a directory called (surprise surprise) Script4D.

READ ATARI
MARK LAWRENCE

So you want to load some Atari files into your computer, eh? It's not too difficult, but it does require some usage of the CLI or Shell. Don't panic – here's a step by step guide.

1. If you haven't already got one, make a Workbench workdisk. This is a bit more than just a copy of your Workbench disk – you should delete some of the stuff on it, to make some room for new programs and utilities (like this one).

2. To make a workdisk, first make a copy of your Workbench disk. Then boot up with it and get rid of the programs that you don't use a lot – things like the Say command, the Calculator, and so on. Just drag them to the Trashcan, then click on the Trashcan and select Empty Trash from the menu at the top of the screen.

3. It's worthwhile to rename the disk, to save it getting confused with other disks. Rename it to Workdisk, using the 'Rename' option from menu at the top of the screen.

4. Now open up the CLI or Shell, and type:

```
Copy from "Coverdisk 20:Read_Atari" to Workdisk:c
```

Why is there a c at the end of Workdisk? In order to use commands from the CLI, they should all be in same place – the c directory. It's short for command directory. After the disk drive has stopped whirring (a second drive makes life so much easier) and a new prompt has appeared on the screen, type this next line:

```
Copy from "Coverdisk 20:conv_scn" to Workdisk:c
```

Conv_scn is a complementary program to convert ST Degas picture files to Amiga IFF files. It's also a command, so it too will have to be in the command directory.

6) Have a good read of the documentation (reboot with the Coverdisk in the drive, and click on the option on the front menu). This covers actually using the beast: rather than repeating the material here, here's a couple points that are not covered.

When using *Read_Atari* you must specify DF0: If you only have one disk drive. The program will prompt you to swap disks and press the Return key, but don't press the key as soon as you've put the disk in. Wait a few seconds until the drive has stopped whirring and the Amiga knows that a disk has been inserted.

An Atari ST DEGAS picture being tidied up with *Deluxe Paint III*.

Click on the red buttons to change the option.

MAKEAUTO
MARK SMIDDY

InstallPrinter and MakeAuto are both Workbench-only programs.

With a little thought and ingenuity, Workbench 1.3 can be given some of the features offered by the new Workbench 2. One of these new facilities is the Workbench-Startup drawer, which allows you to run a program automatically, just by dragging its icon into a special drawer. This can be useful because it avoids the need to modify the Startup-sequence.
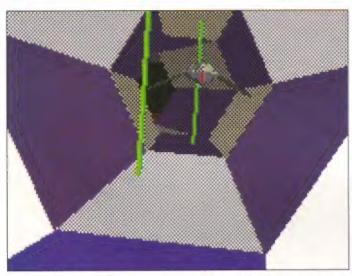
Let us suppose you always run the Clock and *VirusX* when you switch on. Either you have to boot the Workbench and do it all by hand or you could alter your Startup-sequence to do this – but that's tricky. *MakeAuto* removes the need to do so. Follow the Beginners' feature on Page 173 to learn fully about using *MakeAuto*.

HARD DRIVE WARNING!!

There is a bug – not in the program, but in the Amiga's operating system – that makes it inadvisable to use MakeAuto with a hard drive. Please only use MakeAuto on a COPY of your Workbench floppy.

FIXINT
SHAUNE BEATTIE

Oh misery, the *Interphase* game on AF18 didn't load and save! Boo! Don't panic, clicking on this program on the front of the menu will heal your *Interphase* Coverdisk. Have it to hand and make sure that it is write enabled (ie you can't see through the little hole on the corner). Follow the on-screen instructions. It's so easy!

PIC OF THE MONTH
STEVE MICHEL

Only one entry ever wins this coveted award, and this time it's Steve Michel. Unfortunately you didn't send your address, Steve, so do get in touch. If you have a stunning image and you fancy earning £10 plus the kick of seeing it on every copy of *AF*, send it to: Pic of the Month, Amiga Format, 30 Monmouth St, Bath BA1 2BW.

INSTALLPRINTER
MARK SMIDDY

Last month there was a lot of confusion over getting *InstallPrinter* onto a Workbench disk. Still, it is very useful, so here we go again.

InstallPrinter will replace the original Commodore program supplied with Workbench, so you should only work on a COPY of the Workbench disk supplied with your machine. The following instructions serve to demonstrate one way of copying a Workbench file between two disks – there are many others.

ALL MACHINES
1: Open the "write protect" shutter on your Workbench disk
2: Close the "write protect" shutter on the Amiga Format Coverdisk
3: Boot your copy of the Workbench disk (put it in the drive and switch the machine on).
4: Open the Workbench disk by double-clicking its icon.
5: Open the drawer marked 'Utilities' by double-clicking its icon.
6: Users with two or more drives, proceed to Step 9
7: Remove the Workbench disk from the internal drive (drive df0: that is).
8: Insert *Amiga Format* Coverdisk 20 into the internal drive.

USERS WITH TWO OR MORE DRIVES
9: Insert Amiga Format Coverdisk 19 into any external drive.

ALL MACHINES
10: Open the Coverdisk by double-clicking, as described at 2.
11: Open the drawer marked "Getting_Started", as described at 3.
12: Point the mouse pointer at the icon labelled *InstallPrinter*.
13: Press and hold the left-hand mouse button
14: Move the mouse and the icon moves with it.
(This little procedure is called 'dragging'.)
15: Drag (move) the *InstallPrinter* icon over the icon labelled InstallPrinter in the window marked 'Utilities.'
16: Users with two or more drives proceed to step 18.

USERS WITH ONE DRIVE
17: The Amiga will now prompt you with a message like this: "Insert volume Workbench1.3 in any drive" and that is exactly what you should do.

ALL MACHINES
18: The new *InstallPrinter* program will be copied from the *Amiga Format* Coverdisk to your duplicate Workbench. This completes the installation procedure for this program.

IF YOU EXPERIENCE TROUBLE
The only problem you are likely to encounter with this relatively simple operation is a requester stating: "Volume Workbench 1.3 is write protected" or a message like "Error while opening InstallPrinter: 222".

In the first case, this means you have forgotten to close the write protect notch on the Workbench disk! If this happens, just remove the disk, slide the small black tab to the closed position and try again.

In the second instance, you have tried to copy InstallPrinter from the Workbench disk over the new program supplied with the magazine. The error message "222" is telling you the icon (program) cannot be deleted – this was done deliberately to stop you accidentally overwriting it! If this happens, start again from scratch and follow the instructions carefully.

PROBLEM SOLVING
Q: Why does InstallPrinter (Coverdisk 19) return Volume RAM Disk is full, when it is empty? I have a 512K machine with a single disk drive.

A: This was caused by an unforeseen bug which cropped up in the software. *InstallPrinter* uses the RAM Disk to temporarily store the printer drivers. The RAM Disk adjusts its size automatically as you put more into it – provided there is enough memory left. This is further complicated by the copying operation which "borrows" 100K of RAM while it operates. Version 1.2 (on this month's Coverdisk) avoids this by only copying a single driver – which is a better method anyway.

Using Your Coverdisk

1. Always write-protect your disk. Move the tab so a hole is showing.

2. Back the Coverdisk up if possible. Instructions are given below.

3. Read the instructions when using the programs.

USING THE PROGRAMS

All programs on the *Amiga Format* Coverdisk are specially set up to make them as easy to use as possible. Simply put your Coverdisk 20 in the drive and switch on. Wait for a few seconds and a menu will appear with a screen similar to the one below. The less technical of the programs on this disk – *The Power* demo in both NTSC and PAL versions, *Fixint* and the *Pic of the Month* – will run from this simple menu. Click on the red button by whichever choice you want.

Full details on how to use the programs that will not run from this menu system are included in the Coverdisk pages on the preceding pages of this magazine.

BACKING UP YOUR DISK

It is important to make a backup of the Coverdisk as soon as possible. Copying the disk may sound like a complicated task suitable for techno-buffs only, but it is surprisingly simple provided you read the following instructions carefully:

1. First, turn on your machine and load Workbench. Once the Workbench screen appears and the disk-drive light goes out, remove your Workbench disk and insert our Coverdisk.

2. Next, click once on the Coverdisk icon and then press the right mouse-button and the Workbench menus will appear. Now, while keeping the right mouse-button depressed, move the mouse pointer over to the 'Workbench' heading and a menu will drop down. Move the mouse pointer over the 'duplicate' menu option and then press the left mouse-button.

3. After a few seconds' disk access, the Workbench DiskCopy tool will be loaded and run. Now just follow the on-screen prompts and your *Amiga Format* Coverdisk will be copied to a backup disk. When the machine asks for the destination, insert your blank disk into the drive.

Further instructions are in the user's guide that comes with your Amiga or in the *Taking the First Steps* article on Page 239 of the January issue (18) of *Amiga Format*.

DISK PROBLEMS?

If you have a problem with the disk – and you're sure the disk is in full working order – then you may need a little help. We cannot normally give out advice over the telephone – but if you are completely stuck, Pat McDonald may be able to deal with any problems you may encounter. Please remember that giving this sort of advice is extremely time-consuming and we are very busy people, so only call if you really have to and do be considerate if we can't talk to you at that particular moment. It is generally better, if you have a problem, to send it to us in writing stating the model of your machine and anything you've got attached to (or plugged inside) the computer. It will then be dealt with in the Workbench pages of the magazine. Remember, if your disk is faulty send it to the address on this page, NOT to us. We haven't got any stocks.

EARN UP TO £800

Name..
....

Address...
....
....

Telephone (Daytime)...
              (Evenings)..

My program name is..
....

Approximate total size of files in kilobytes.................K
(we cannot use programs longer than 200K; shorter submissions, under 100K, stand the best chance of publication). It is a:

☐ Game   ☐ Technical tool
☐ Business utility   ☐ Art program
☐ Music program   ☐ Educational
☐ Novelty   ☐ Other

Brief description ....
....
....
....

Checklist (please tick):

☐ Stamped, addressed envelope for return
☐ README.DOC explanation file on disk
☐ Printout of README.DOC file (if possible)
☐ Name, address, machine type written on label
☐ Disk certified virus free

IMPORTANT Please sign this declaration:
This program is submitted for publication by *Amiga Format*. It is wholly my own work and I agree to indemnify Future Publishing against any possible legal action should copyright problems arise

Signed ....

Date ....

SPEEDBALL 2

BRUTAL DELUXE

SOME DAY, ALL SPORT WILL BE PLAYED THIS WAY

It's two years since the last ball was thrown on a Speedball pitch. There are new teams, new stadia and new rules. The arena is bigger, the players are tougher and the action is faster than ever before.

The challenge is this. Take control of Brutal Deluxe, the worst team in Speedball history, and turn them into champions.

Transform weaklings into killers in the gym.

A squad full of wimps? Shell out for a Star Player!

Two divisions and 15 teams stand between you and the championship. Take no prisoners.

It's a goal!

Celebrate that moment of glory in style.

Choices to Keep you ...at Truly Wizard

You've got all the questions...

WHAT CAN A GOOD LAY-OUT DO FOR ME?

DTP Page 29

IS IT EASY TO MAKE REALLY GOOD VIDEOS?

Video Page 30

CAN I MAKE MY PICTURES COME TO LIFE?

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WHY DO WRITERS USE A COMPUTER NOWADAYS?
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Finance Page 34

WHAT DO I NEED TO CREATE A HIT RECORD?

Music Page 27

HOW CAN I CATALOGUE AND INDEX LIKE A LIBRARY?

Databases Page 33

...We've got the answers!
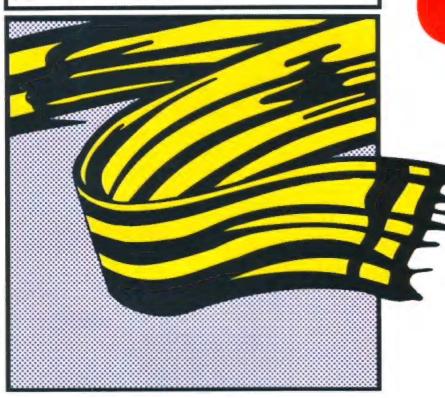
The Amiga can do so many different things — and do them so well — that at times, its power can be a little confusing. Even experts in one area of its abilities, such as programming, often don't know much about the other aspects of its personality.

So whether you're a newcomer to the Amiga or an old hand who wants to gain a broader knowledge, this feature is aimed especially at you. We'll give you an idea of what you can achieve and what you will need to do it. We'll save you money by telling you exactly what are the best buys to suit your needs - and recommending the excitingly new or the outstandingly good in 'The latest, The Greatest. Plus, the 'It's a Steal!' panel will offer you cost-free options from the Public Domain. So all you need to do is get out there and do it...

BRAD GASPED IN AMAZEMENT AT THE GRAPHICS...

Grap

Aegis) which is essentially a highly advanced version of *Photon Paint* with added animation features, making it a HAM rival to *Deluxe Paint*. Check out Page 158 for further details.

animation

an' im' ae' shun, n. a technique by which the rapid flipping of changing pictures gives the impression of film-like movement

The old Disney classics did it by painstakingly drawing each picture, shooting it to one frame of movie film, then drawing the next frame in a slightly different position.

Now computers do it by moving from one frame to the next, but because you can simply repeat the last frame and alter it to make the new one, it's a sight easier.

Plus, computers let you cheat in other ways: like simply drawing an object once, defining the path you want it to follow and then letting the computer work out how it will whizz across the screen.

Deluxe Paint III is a classic when it comes to animation, allowing you nearly all the cheats you could want, and is an excellent start. New competition in the animation department comes from Disney's **The Animation Studio**, which is great for Mickey Mouse-style character animation.

paint

p' ein' t, adj. a graphics program using a simple 'bitmap' system (see below) to create colourful pictures with ease

There are two types. The less common kind is what's known as a 'structured' drawing system, in which everything you draw is a complicated 'structured object'. This means your drawing is described in terms of mathematics, so each different line can be stretched or moved separately and however large you blow something up, it always remains perfectly smooth and straight. This is highly professional-looking, but is not so simple.

The only real example on the Amiga is **Professional Draw 2** (£199.95, Gold Disk via HB Marketing) which is certainly very good, if not for the beginner. Its real strength is for use in DTP work. Apart from that, the only other use is in CAD (technical drawing) programs such as **X-CAD Designer** (Cadvision International, £115).

Paint it Easy!

The more common kind of graphics program and the easier kind to get to grips with is the 'bitmap' type, often known simply as a 'paint program'. With these, the picture is made up of lots of little blocks of colour on the screen and stored in the computer as a description of where each little block is on the screen and what colour it is.

There is now quite a range of

Amiga paint programs, but unless you want to use the slightly awkward HAM mode to allow yourself a choice of 4,096 colours, there really is only one choice: **Deluxe Paint**. This also figures very large in the 'animation' section and wins in the 'Greatest' category below, so 'nuff said.

Perhaps worth mentioning briefly, though, are a couple of niche market items: **Icon Paint** (Hi Tension, £14.95) is an excellent little affair for designing 16-colour Workbench icons; and **MyPaint** (Centaur Software, £34.95) is a cracking simple paint program for kids, fun and easy to use in equal measure.

HAM and Eggs

The Amiga normally only lets you use 32 colours in one of your pictures. Until, that is, some clever chap in the States came up with a bizarre bit of mathematics that allows a picture to use the whole of the Amiga's 4,096 colours and shades at the same time. Clever stuff.

There are two very good HAM paint programs available which seem to be equally popular. **Photon Paint 2** (Microillusions, £89.95) edges slightly ahead on features, but loses out on speed and ease of use. **DigiPaint 3** (NewTek, £69.95) is written for speed and is pretty easy to use, but the range of tools is not quite as comprehensive. You pays your money and you takes your choice.

Big and radical news on the HAM front is the arrival of **Spectracolor** (price not yet announced, from Oxxi-

hics

Both these are used mostly for colourful cartoon-like work.

The heroes of the demo-writing scene, **Videoscape 3D** (Aegis, £145) and **Sculpt-Animate 4D** (Byte by Byte, £370), are suited more to flashy 'computer graphics' animations (like the *Tomorrow's World* logo or the famous Juggler demo), or to modern sci-fi work (like Tobias Richter's famous *Star Trek* demos). *Videoscape* is old and tricky to learn, but still very popular. It uses 3D solid objects, so looks cracking. Even better-looking is Sculpt's ray-tracing. Both these programs allow you to whizz things along animation paths, making life easy because you don't have to draw each frame, and because they are three-dimensional they can even make things smaller as they disappear into the distance.

three-dimensional

adj. graphic that is first modelled using x, y and z coordinates then displayed by projection or ray-traced rendering

3D programs work by describing objects using coordinates: if you want a cube, for instance, you can define it with eight points for the corners. The simplest models are 'wire frames' in which just the points and lines are

MICKEY RAN AS FAST AS HIS LEGS COULD CARRY HIM...

THE LATEST, THE GREATEST

There's too much going down in this area to say anything right now. Latest are Real 3D, which uses clever new maths techniques, and Imagine, reviewed soon: traditionally greatest is Sculpt-Animate. But with 24-bit colour and several new packages coming, just wait a bit and see!

THE LATEST, THE GREATEST

Disney's The Animation Studio
Entertainment International £99.99

In the Greatest category *Deluxe Paint* could take it for services to us non-experts, as could *Videoscape* or *Sculpt-Animate* for a history of excellent demos: in the Latest category, Spectracolor, the HAM equivalent of *Deluxe Paint*, might have stolen it. But no, we're going to give the Latest award to Disney's new package, partly for the weight of experience in traditional character animation and partly for a couple of fresh new ideas. The player program it uses is a neat idea and the palette that changes from frame to frame of the animation could allow a freedom of expression not previously managed. See the review on Page 163: but remember, it's really for those who can draw well...

IT'S A STEAL

The main choice here would be *C-Light*, a simple ray-tracing program that is a good introduction to the subject. Shapes are built up from a few primitive choices – boxes, spheres and cylinders. These shapes can be distorted to give a fair representation of the shapes you want. An older option is the *Ray Tracing Construction Set*. It's tough to use, and is really for people who already know about ray tracing. In general, you can get better results than with *C-Light* but the effort required has dictated that the program remains obscure and unused.

drawn — a system used by 3D CAD programs such as **Design 3D** (Gold Disk, £79.95). After that, the more advanced 3D modellers put a 'skin' onto the bones of the wire frame: this is called 'filled 3D' and is used to excellent effect by Videoscape.

The most sophisticated area of Amiga graphics is ray-tracing, where the skin on the 3D objects has its colour and texture defined, a light source is set and very complex equations work out how the light will

bounce off the object. this is what allows the shiny balls, mirrors and 'glass' look of typical ray-traced pictures. It takes ages to work out these pictures, so extra memory is vital and accelerator boards help.

There is great innovation and competition in this area. **Turbo Silver** (Impulse, £120) is effective but old and tricky to use; **Sculpt-Animate 4D** is sophisticated but expensive; **Real 3D** (Amiga Centre Scotland, £115-£435) is quick but less effective. Also on the way soon are **3D Professional Ray-tracer**, **Imagine** (an updated *Turbo Silver*) and rumours of one more. This is a growth area and it's worth waiting a month or two for new products before buying. The reason why this is where all the action is 24-bit colour: see the panel 'True Colours'.

TRUE COLOURS

This is an exciting time in Amiga graphics, because the next big breakthrough is now happening. With 24-bit colour an add-on card will allow over 16 million colours to be used and this is known as 'True Colour'. The results can be stunning, easily as good as TV or photography but on a standard Amiga monitor. Trouble is, painting with that many colours ain't easy: so despite the development of 24-bit paint programs like *MegaPaint* (more news next month) it's image generation programs, and particularly ray-tracing, that will really benefit. See Issue 17 for more on how True Colour works, or wait for next issue's graphics special.

sample *sâm' pul* n. a slice of sound stored as digital information by a computer or electronic instrument, acting as a 'building block' for tunes

Yep, it's samples that have created pop music as we know it today. The progress of sampled music from dogs barking in tune on *Tomorrow's World* (or was it *That's Life?*) to creating chart hits in your bedroom à la Candy Flip's *Strawberry Fields* has been rapid.

An Amiga sampler is a combination of a hardware gadget that takes in sound via a cable from a hi-fi or a microphone and slices it up into digital information and software that allows you to mess around with the sound afterwards and, by repeating a bit of it, make it into a tune. Just a few seconds each of drums, piano and vocals is easily enough to make an adequate House tune.

There are some good complete hardware and software sampling packages around. **Technosound** (New Dimensions, £34.99), is a good, cheap start if a little basic and comes with a cassette tape tutorial, while **Master Sound** (Microdeal £39.95) is good quality, if not perfect for editing. The king of them all is the Audio Engineer package (£199 from HB Marketing) which has the best piece of hardware around.

The excellent software that makes up the **Audio Engineer** package, **AudioMaster 3** (Oxxi-Aegis), is available separately and in a number of variously-priced deals. It's incredibly good, combining clear design and great ease of use with a huge range of editing features. **The Soundtrap III** hardware (Omega Projects, £38) is a minute piece of kit good for beginners to use with the **Audiomaster** software, while the **Mk 2 Stereo Sampler** and **Audiomaster** combo is very powerful one (Trilogic, £99).

sequence *see' kwens* n. a song or tune described simply as a list of notes (or 'events') happening at a particular time

The principles behind sequencing are actually dead simple: a tune is built up simply by saying when something happens and what that thing is — a drum beat, a guitar chord, a bass note. If you think about it, music is quite mathematical: beats per second, beats in a bar and what have you. Sequencers tend to have three ways of showing a tune: just as numbers, which is very hard work; graphically, which is a simpler and clearer way of showing the same thing; and in traditional notation, which is no use to you unless you understand crotchets and minims but might be vital if you are used to real music.

AS THE MUSIC PLAYED, I KNEW WHY TEX HADN'T BUZZED ME...

BLAAH!

Music

THE LATEST, THE GREATEST

Audio Engineer
£199 HB Marketing

It's a close-run thing, with MIDI sequencers like *Music-X* particularly highly rated by our team of experts. MIDI sequencers are really the serious end of the music market, because using MIDI allows you access to the kit that hits professional standards. But the quality and accessibility of this sampler, together with the way you can easily build whole tunes from just a few brief samples looped and mixed, gives this a quality that captures the spirit of modern electronic music. House hits created on your Amiga are a step away...

IT'S A STEAL!

Music software is probably the best supported area of the Public Domain and simple sequencers are dominant. Most cannot sequence MIDI instruments but rely on sound samples. *Soundtracker* is synonymous with this kind of sample sequencer, but was not PD: but versions of it are PD (*Noisetracker* and the latest, *ProTracker*). MED 2.12 can also do this, but MIDI seems to be better implemented. New PD music programs are released all the time — for instance MED 2.13 is available, although we have yet to see a copy at *AF*.

The simplest sequencers play samples just through your Amiga, so you can make tunes very easily. **Sonix** (Aegis) is a classic and still very popular, so buy it where you can, and apart from that look in PD libraries. **TFMX Soundtool** (Software Business £44.95) is an excellent tool for doing this sort of sample-based music for games and programming.

MIDI sequencers open up a whole new can of worms and are really the sharp end of the music business. MIDI is a system used by computers to talk to electronic instruments such as drum machines and synthesisers.

Simply invest in a MIDI interface (about £30-£40) and you can use this system, so when you write a tune in a MIDI-compatible sequencer, it will play using the sounds from the synthesiser rather than samples from inside the Amiga.

MIDI sequencing is another very competitive area, but **Music-X 1.1** (Software Business, £149.95) is doing its damnedest to dominate and is a thoroughly excellent and very flexible program.

A challenge is provided by **Bars 'n' Pipes** (Blue Riband Bakery, £219.95) with its bizarre but accessible graphic style. At the beginner's end it's a toss-up between **Trax** (Passport, £99) which is cleverer than **Tiger Cub** (Dr T, £99) but can only use MIDI, not Amiga samples: and the **Junior** version of *Music-X* (£75). Really, it's pretty much equal, but *Music-X* might steal it if you want to move up to its big brother later on.

BILL SHOOK WITH EXCITEMENT AND ANTICIPATION AS HE TYPED THE FINAL WORDS OF HIS FIRST NOVEL...

Word Processing

word processor *wird'-proseser* n. software that imitates a typewriter, with the advantage that text can be altered and corrected with ease

This is far and away the most common type of 'serious' software, which is no surprise at all when you consider how easy it makes what used to be a very tricky job. If you want to make a good impression or, like most of us, your writing veers inevitably towards the illegible when you're scribbling at any speed, then a typewriter would once have been the obvious answer.

There's one obvious problem with this that anyone who's ever used an old-fashioned mechanical typewriter will find uncomfortably familiar: the sheer frustration of typing mistakes. Tippex is never quite good enough and irritating hours can be wasted while you start afresh each time you make a mistake. It's hideous!

Where once typewriters were common in offices, they're now rapidly being replaced by a computer running word processing software. Not only can you correct mistakes

easily, but a word processor also gives you a great many other advantages. Some of these are standard features on most word processing

programs: a 'spell checker' to whizz through and make sure all your words have the right spelling, 'cut and paste' options which let you move whole chunks of text around, the ability to print as many copies of the same thing as you want.

Others often count as extras and are worth looking out for: an 'undo' facility that allows you to correct your last mistakes as you go along, a 'thesaurus' to help you find that word that's on the tip of your tongue, a 'mail merge' facility enables a standard letter to be printed with different names and adresses in each time à la Reader's Digest 'You may already have won' competitions, and finally ASCII (usually pronounced 'Askey' as in Arthur) compatibility, which means the ability to save text in a standard file format that can be read by any WP, even those on lesser machines like an IBM PC or the Macintosh.

There's a number of good word processors around of the kind that just deal with words: for those that also deal with pictures, see below. **Microtext** (Anco £19.95) is a real cheapie, more suited to kids. **Scribble 2** (Microsystems Software £49.95) is enduringly popular with buyers and does everything the home user would need, but is a shade rough and ready.

Check out the **Gold Disk Home Office Pack**, which includes a word processor and a DTP package, in the DTP piece; and look out for **Transwrite** (Gold Disk, the WP program from the *Home Office Pack*) and cheap-and-cheerful **QuickWrite** (New Horizons, cut down from the market's most expensive WP package **ProWrite**) both of which are new and to receive coverage in *Amiga Format* in the near future. The king of them all by far, however, is still *Protext*.

THE LATEST, THE GREATEST

Protext 5
Arnor £149.95

It's expensive, it's a bitch to get to grips with at first, but it's got such a heads-down, no-nonsense approach and such power that it really does triumph as a professional tool. The older version *4* is still available priced at £99.95, offering the basic *Protext* power of unlimited size documents and speedy spell-checking as well as mail merge, while the newer version has the extras of a new 120,000-word dictionary, better printing and an easier file requester. We like it — and so we use it here at the office for all our Amiga-based writing.

IT'S A STEAL!

There's only one halfway decent word processor in the PD. *TextPlus 2* scores big in one area: it's very simple to use. It lacks many advanced features like mail merge, spell checking and macroing: it can't print out selected blocks of text. For the odd document, though, it's ideal. All the commands are in menus and have 'hot keys' for when you need short cuts. Find and replace is easy to use, and it uses standard Amiga printer drivers — so as long as your printer has been correctly installed you're laughing.

word publisher *wird' pub-'lish'e* n. a new phrase to describe word processors that let you use pictures and do lay-out like DTP

That definition pretty much says it all. The advantages of using pictures or diagrams and proper lay-out is that you can produce interesting business presentations or newsletters with relative ease.

Kindwords (The Disc Company £49.95) is good as a simple WP package but doesn't quite cut the mustard in the layout stakes. **ProWrite** (£139.95) has a thesaurus and is of a very high standard, but **Pen Pal** (Softwood £129.95) steals it by a head. *Pen Pal* is very easy to use and very good indeed, with excellent graphics handling allowing you to use any kind of Amiga piccie and letting you 'flow' text round odd-shaped pictures, plus a rather fun facility to check the standard of your writing.

MOVE UP TO COLOUR

The very sharp end of modern DTP is full-colour work. This allows DTP to replace a whole extra section of the expensive printing process, colour reproduction. It works like this: a full-colour printed page is actually printed using four colours of ink. These four colours are cyan, magenta and yellow, the 'primary colours' of dyes from which any other colour can be made, and black. At the printer's, each of these colours is put on the page in turn: so a picture that needs to be printed in full colour must first be split into the four colours so that each colour can be printed.

This process is known as 'colour separation' and really is the key to the two big heavy-weights, *Professional Page 2* (Gold Disk) and *Pagestream 2* (Soft Logik) both of which are new and reviewed in this issue on Pages 117 and 118. Their other big feature is Postscript output, which means they can use high-quality output devices such as laser printers and typesetting printers like the Linotronic. In my opinion if you want to use DTP for professional purposes you're still better off using a Macintosh-based system, but Gold Disk for one would argue that I'm wrong and new developments in the near future might prove them right.

(Desktop)-Publishing:
the use of computers for the typesetting, layout and design of magazines, books, newspapers etc replacing older methods

The magazine production process is not as complicated as many people think. What used to happen in those long-gone days before computers (BC) was that words for a magazine would be typed out, then 'specified' (scribbled all over) with notes to a typesetter. The typesetter would then operate a big machine to put the words into the right fonts (typefaces)

THE LATEST, THE GREATEST

Professional Page 2
Gold Disk See review for UK price

In my opinion, the jury is still out on Amiga DTP. The professional systems *Pagestream* and *Professional Page*, used on a B2000 with a 40 Meg hard drive and 4 Meg of RAM can still not compare to a Macintosh with only 2 Meg of RAM. Nevertheless, the Mac is a good deal more expensive and the addition of a flicker fixer and a faster processor to the Amiga would bring near parity: we'll try a comparative test under these circumstances soon. Still, *Professional Page* keeps the top spot among Amiga DTP programs, with greater speed, flex-ibility and ease of use than any other and a good handling of colour, particularly benefitting from the use of the official 'Pantone' colour system which is almost an industry standard.

IT'S A STEAL!

There are no full-blown DTP programs in the PD, so far as is known. What you can get, to enhance your DTP productions, are immense amounts of clip art and fonts. *Softville PD* (0705 266509) has a specialist list of seven disks with this sort of material.

Every PD library, mind you, has huge amounts of graphics to include within your DTP system. In nearly every case they're saved in standard IFF format, so that you can use them with virtually any DTP system.

Desktop Publishing

and send back big strips of typeset text: headlines in big letters, the rest in one long column. Next a layout artist would cut it all up and glue it down in the right places on a page template.

The pictures have to be 'half-tones' (broken up into little dots) because if they aren't the final version looks like a bad photocopy, so the layout man would also have to put photographs onto a special camera and take another picture of them through a special screen, breaking them up into lots of little dots. At the same time, the picture would be blown up or reduced to the right size. Then it would be stuck down on the page with the words. Complicated or what? And that's just a simple black-and-white page!

Publishing has probably been more affected by computers than any other industry. The technology is filtering down to the home computer, but if you want to produce a maga-zine like ours you're still talking an awful lot of money — this is more for the very fine quality of the final output than for the basics of layout and typesetting. Amiga DTP software will allow you to do all the things us professionals do.

What this means is replacing all the old-fashioned methods above with the ability to lay a page out on screen, pulling the words straight into the page from a word processor, styling all the text into the right typefaces and sizes and moving it about the page so it is in columns and head-lines. You can also include pictures, either from an Amiga graphics pro-gram or by scanning in photographs with a little hand scanner — a whole range of which we'll be reviewing next issue. Then you can print it out on a dot matrix or inkjet printer to give you a rough-and-ready but pretty decent effect good enough for newsletters and the like — or to a laser printer, which will give nearly good enough quality for seriously smart business leaflets or even books.

There have been several low-end DTP packages floating around over the years, but the only one with any real appeal is **Pagesetter 2** (Gold Disk £99.95) which is also available in an excellent bundle, **the Home Office Pack**, which includes the WP program **Office Write** (which is really **TransWrite**, once known as **Transcript**) and the winner of the 'Greatest' award in the Database sec-tion, *Advantage*, for only £129.95.

NOW I HAVE THE POWER TO MANIPULATE ALL THE IMAGES ON THIS VIDEOTAPE...

Video

genlock *dzen' loq,* n. a piece of hardware that allows the Amiga's video signal to be combined with a TV or video picture and recorded to tape

You have to own one of these before you can begin to use your Amiga for video work. It has two functions. First, it converts the RGB signal that your Amiga sends out for the monitor to display into a composite signal of the kind used by a television or video recorder. Second, it can merge or blend the computer picture in with that from a video or a telly and record the merged picture to video tape.

In practice, this often looks like one colour in your image is transparent and the video picture is showing through it. The genlock asks you to choose one particular colour — very often a bright blue — on your computer pictures, into which the video picture will be put.

This idea may be familiar to a lot of you if you have seen TV programmes explaining how they 'superimpose' a weather forecaster, for instance, on top of a map of Britain, or place Chris Reeve as Superman next to a speeding aeroplane. The person is filmed against a bright blue background, then the new background is dropped in instead of

the blue. It's known as 'chromakeying'. The best genlocks will allow you to choose what colour to use as your 'transparent' one.

Take a careful look at the following options and don't buy in a hurry. **The Minigen** (Applied Systems and Peripherals, £114) is the cheapest and is perfectly adequate for a beginner's needs. Higher-quality professional equipment is available from Rendale in the form of the **A8802** (£280); from G2, who do the **Videocentre** (£595) which includes software control of video mixing; and from Marcam, who cover the Rendale range and have a new product under development so more news about that soon.

The **GST Gold** (£500, Third Coast Technologies) is solid and reliable but misses a couple of the extras for mixing that the G2 Videocentre has. A good all-round bet is the **Superpic** (JCL, £575) which combines a real-time colour digitiser with the genlock.

titling *tit' ling,* n. the process of adding titles, captions or subtitles to a video to give information and add a professional look and feel

Amiga Desktop Video (or DTV) is dominated by 'titling' software. This can be used to add intro titles and end credits to your video productions, just like on the TV, as well as to add subtitles and do flashy pop effects — much titling software goes well beyond its brief and provides plenty of added value in the form of effects, wipes, fades and transitions as well as titles.

There is now a bewilderingly large range of titling packages around for the Amiga, but basic things to look for are a good range of fonts and effects, video 'time code' compatibility and any other little extras that might make your synchronising of video and computer signals more accurate. And, if you are a fussy type, the capacity to use the TV-compatible 'Interlace' mode to display images in high resolution.

A good way to start is with *Deluxe Paint*, but among the more specific Video Titling packages you should look at the following: the very latest, **Broadcast Titler** and **Pro Titler**, are reviewed in this issue, so you should read up on them there; **Title Page** (Precision, £139) scores highly on its range of effects and the free-standing programs that make and play animated sequences for you

Finally, look carefully at **Video Studio** (ZVP, £99) which, frankly, is not a titling package at all, but is an invaluable set of twelve handy little tools for video production, including an impressive range of fades, wipes and transitions.

THE LATEST, THE GREATEST

Deluxe Paint III
Electronic Arts £79.95

Winning in the 'greatest' department. It's a controversial choice, admittedly, with so many made-to-measure video titling packages around, some with unique features very well suited to video work. But in our opinion, a genlock in combination with a copy of *DPaint* is a powerful mixture indeed and could well be all you need. The paint package is blessed with a huge variety of fonts which can easily be dropped onto a genlock's 'key colour' background to give titles: and when you add in the capacity to produce long and complex animations with great simplicity, you've got a very strong case. Stylish, if 'rough and ready' pop videos, for instance, should be a doddle. For anything but the most sophisticated and 'clean' work, this is a potent package. More about video packages and techniques in Issue 23!

IT'S A STEAL!

Very little is available. Most if not all PD programs of this type are American in origin, and so are not useful due to the different video system. Some which are consist of diagnostic tools to set up and test video signals: BarsnTone, TimeCalc, VTDT and Lace. For titling purposes, there is a demo version of *TV Text Show* to show what that program can do. *Direct Action* is a nice animation editor. Although a bit on the fiddly side it can compile and edit small animations. As well as the graphics side, sounds can be triggered to occur at certain points. It's not ideal but you'd be surprised just what you can do with it

database *dæt' e' bæs*, n. software used to store information that you type in and designed to make it easy to find the bits you want

If you're not exactly sure what a database is, or you do know what it is but wouldn't know what the hell to do with one, you may be surprised to find that they can be very useful indeed. Databases are also the second most popular 'serious' program on the Amiga, after word processing. Basically, they're intended to store big catalogues of information and supply some kind of index system so that you can get at the info you need when you want to.

This may seem a tad pointless, but it can be interesting and also useful if you have any big collections of anything. Our Art Editor Marcus, for instance, bought his Amiga in the first place so he could get a database and make a catalogue of his truly enormous record collection. Maff is currently setting up a database to hold details of his video library.

Information in a database is stored as a series of 'records' each of which has a number of fields to give further information about it. Each record in Maff's database, for instance, would be a video. (A record that's a video? hang on a minute!) Each video record would be split into fields containing: first and foremost, the film's title; perhaps some kind of index number; the director; the star; year of release; running time.

Once you've got all the information in there, there's a couple of things you can do with it. First, you can sort it: which would be an easy way of putting the titles into alphabetical order, for instance, but if you were curious you might want to sort all your films according to year of release. By sorting on two different fields at the same time, you could put them into alphabetical order within each year.

Second, you can search. This allows you to pick out one particular record by looking for a unique quality (a video's title, for example) but also allows you to pick out a number that have something in common: all films that were directed by Paul Verhoeven, for example. Again, by searching on two fields you can find records that share the same qualities: all films made by Paul Verhoeven and starring a certain actor.

Again (and I've definitely said this before) the Amiga is blessed with a wide choice of this kind of software and the standard is very high. At the cheapest end is **Microbase** (Anco £19.95) which is good value and works perfectly competently. There is little to separate this from **K-Data** (Kuma £49.95) which has a few more features and a good reputation.

IT'S TOO LATE CHUCK, I'VE SEEN THE SORDID SECRETS STORED IN YOUR COMPUTER...

Databases

THE LATEST, THE GREATEST

Superbase Personal
Precision £59.95

Yes, it's a clear winner. *Superbase* pulls itself up by the bootstraps to get a head above the rest, mainly thanks to great approachability and ease of use. Its great innovation is in the use of a video recorder-style control panel to whizz through the records very rapidly. Fields can have graphics and text files from outside the database 'attached' to them so that they can be pulled in at the appropriate time and the program supports all the Amiga's graphics modes including HAM, which is no mean feat. It allows all the indexing, searching and sorting you are likely to need. All in all, a very wise choice. It's also available in a version 2 (£99.95) which adds mail merge (see Word Processing), a text editor, better manual and a host of tweaks including support for files from the very popular IBM PC database *dBASE*.

IT'S A STEAL
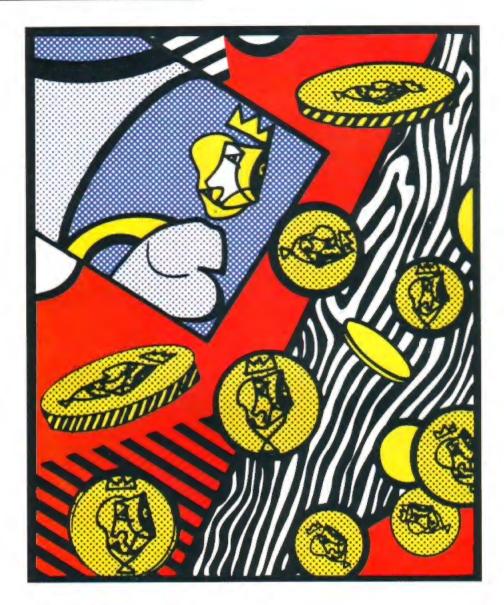
AMiBase is a fairly decent PD database. It doesn't use menus or the mouse, but it does store a reasonable amount of data – and it's not too slow at searching through it either. Written in the AMOS advanced Basic, it has been updated a little from an original which was thrown together quite rapidly with the first release of AMOS. It's still ugly, though, and gets a bit of getting used to. It's very well documented, and includes a help command. The printer functions are also a bit primitive, but for just storing data it's quite a useful piece of software.

A little more 'professional' is **Microfiche Filer** (£69.95) which uses an odd but interesting approach, working like a microfiche in a library.

Prodata (Arnor £79.95) is a companion to *Protext* and will no doubt be popular with people who already own that excellent down-to-earth word processor. It was described in last month's *Amiga Format* as "a professional tool that is ideal for sorting out large, complex databases". Also reviewed last month was **Infofile** (The Disc Company £49.95) which gains much appeal from its ability to store graphics and sound as well as just words and numbers.

Top of the pile, however, is **Superbase Personal** — though its bigger brother **Superbase Professional** (Precision £249.95) takes the idea a step beyond anything the majority of us would ever need and into the realms of ESB (extremely serious business) software, with its own programming language and even a massive graphics department for designing forms. It really should be looked at by companies and experts rather than the home user.

Finance

extremely important. The most important calculations, therefore, are projections — and it's handy to be able to have a few different guesses at what might happen: worst-case and best-case scenarios, for example.

If you have to work this out on pen and paper it's difficult enough to do one set of calculations, never mind several. A spreadsheet makes this easy by doing the sums for you in the first place: and then allows you to change just one entry at a time and see how it affects the outcome.

There are — and we seem to have said this before — several very good packages of this kind on the Amiga. One important thing to look out for, at all times, is compatibility with **Lotus 1-2-3**, the leading IBM PC package, which would allow you to transfer data over from a PC that you at your workplace and use it on an Amiga at home.

Also a very handy thing to have is graphics — the ability to display information as a chart or graph, which makes it easier to take in.

Analyse 2 (Micro Systems £49.95) is very good at the cheaper end of the market, including colour graphics and Lotus compatibility. **Superplan** (Graphox, £99.95) is a good bet if you want 'time management' (or 'project planning') facilities, but Advantage is a winner for speed and ease of use and includes Lotus compatibility and very good graphics.

accounts *ak' owntz* adj. software which lets you keep track of income and expenditure so that you know where your money is

By contrast with many of the other areas of computing, accounting is not well served on the Amiga. **System 3** (Digita £49.95) can only handle sales invoicing, stock control and cash flow control, but is at least fairly simple to use. **Small Business Manager** (Hi-Tension £99.95) has a range of features, ranging from stock control to invoicing, but is rather weakly programmed. **Arena Accounts** (Arena £149.95) is solid, but based on double-entry bookkeeping.

None of these can really handle the full range of small business accounting sufficiently to be trusted with all your accounts.

If it's just home finance you want, however, there is some good news waiting around the corner. **Personal Finance Manager** (MichTron £29.95) is designed specifically to help you handle your bank accounts and also includes a budgeting section so you can plan how to best spend your income and charts and graphs to show how much money you owe! If you're the type of person who is careless with the cash, this could well be the answer.

spreadsheet *spred'-shêt* n. a program that calculates results from figures you enter into it, used to assess and plan financial performance

When you first dip a toe into the soupy waters of running your own business, you realise that much of the calculation involved is concerned with making guesses about the future rather than simply keeping a track on how much money has passed through your hands in the past. When you're setting up a business with a loan you'll be expected to provide the bank with a detailed projection of how much money will come back to you and when.

More businesses actually go under because of cash-flow problems than for any other reason, so throughout the life of a successful business, keeping a track on what's going to happen in the future is always

THE LATEST, THE GREATEST
Advantage
Gold Disk £99.95

Personal Finance Manager is a handy all-round set of tools for keeping track of your domestic bank account, but when it comes to serious use in a small business *Advantage* is the business and wins the 'Greatest' category. *Advantage's* real advantage is its speed, but it is also very friendly to use, which is bound to be a relief for anyone who's just turning their accounts system over to a computer. A very good investment in the fluctuating financial markets.

IT'S A STEAL!

Very little in the way of accounting software has ever appeared in PD form. The reasons for this are many and sundry, but the main one seems to be simply that programmers don't seem to like writing them! A great pity.

Programmers in the States seem to have a more serious bent, however, and there is at least one PD spreadsheet available. It is called *AnalytiCalc* and was 'originally' (origin is almost meaningless in the PD) on Fish 328. As we have never looked at it in *Amiga Format* we can't comment any further.

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Attack of the sequels has hit games software as well as the movies, Chief Reviewer
TRENTON WEBB checks out what's coming to a screen near you this month...

COMING ATTRACTIONS

FULL CONTACT
■ Team 17 ETA — Late Feb

Some of the best demo writers in Europe have teamed-up to form a brand new software house: Team 17. Rico Holmes, and a host of others, working out of 17 Bit PD — Tobias Richter, will soon be launching their first game, *Full Contact*.
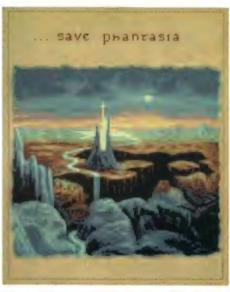
A beat-em-up, in the classic 'one on one' style, it aims to exploit every single ounce of the Amiga's hardware potential. Using skills which they developed during their demo-writing days (check out their work on the PD front for positive proof of their abilities) they will write Amiga-specific games that feature incredible technical trickery, great graphics and masses of gameplay.

NEVER ENDING STORY II
■Linel ETA — Mid 1991

As self-fulfilling prophecies go, *Never Ending Story Part II* is a classic. Based on the recent Warner Bros movie, this time Bastian, our hero, explores such wonders as the orchard forest, visits Silver City and has a crack at giants who are terrorising the world of Phantasia.

The style of the game is claimed to be totally new, although details of its design have not yet been released. The screen shots show that *NES II* will strongly feature the movie's fantasy elements in its graphics, and, if they can marry this to a new style of game they should be on to a winner.

... save phantasia

BACK TO THE FUTURE III
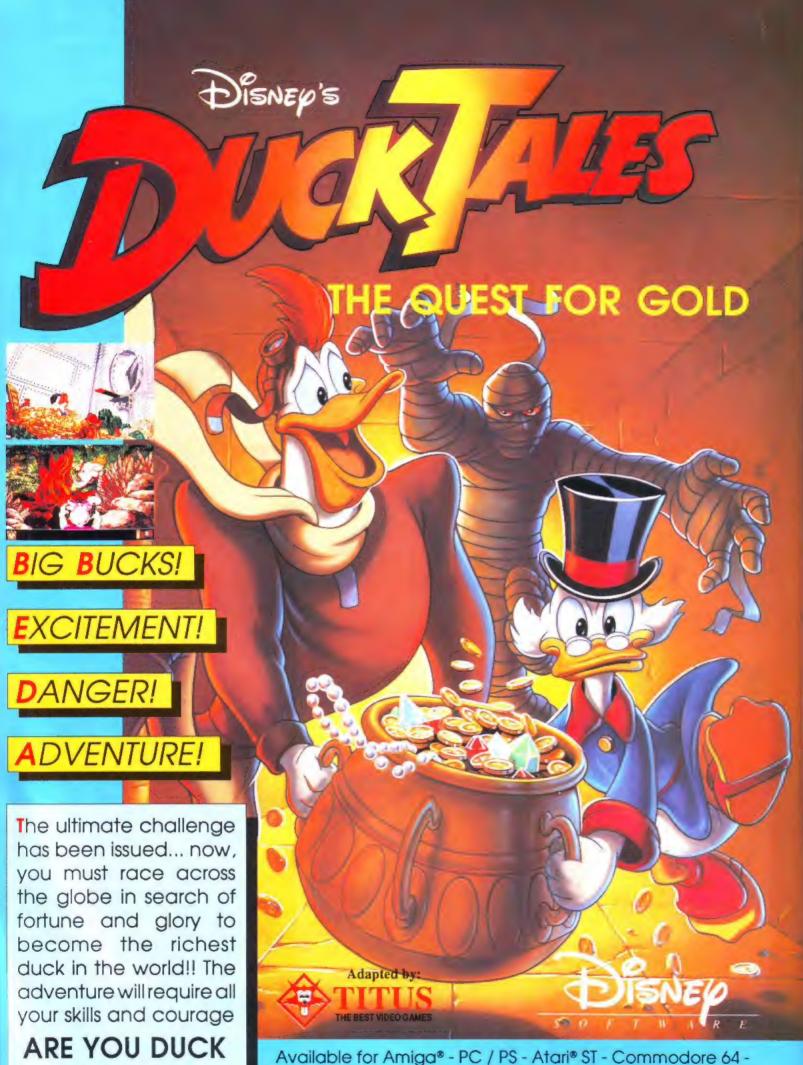
■ Image Works ETA — March

Marty McFly, who having gone back to the past to save his future — which was of course really the present, then went into the future to avert an alternate future is now firmly stuffed. He is stuck in the Wild West and needs to find a source of power for the DeLorean to take them Back to their Future (again!). The last in the *BTTF* trilogy, Mirrorsoft's game takes you sequentially through the movie, recreating scenes from the film.

Marty has to ride a horse, leap cacti and barrels, and shoot some injuns in a bid to save his gal, who is heading towards a cliff in the back of a wagon. Later, he must show his skills at a very dubious firing range, blasting fairground ducks with a six gun in a *Safari Guns* style. A plate throwing battle soon ensues as the 20th century boy 'learns them rednecks' the art of Frisbee.

The whole game ends in a tough leaping level as he tries to take control on the only thing that travels in the West at 88 mph, an express train! Fun graphics and its tongue firmly in cheek, this may be the best *Back* game so far!
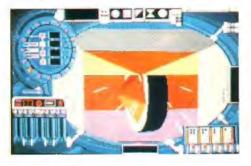
CYBERCON III
■ US Gold ETA — March

Forget *DefCon*, here comes *Cybercon*. In the near future the plot holds that an Ultra-computer, known as *Cybercon III*, has been entrusted with the control of all of mankind's destructive toys. The machine, housed away in a deeply-defended bunker, ensures man's lust for war is kept firmly under control and that its power is not abused.

In the bunker, isolated from reality, a strange mutation has formed in the cybernetic brain of Cybercon and driven him spacky! The result is a genocidal war against mankind. The game follows a bid by a small band of survivors to enter the protected vaults of Cybercon, to destroy the machine and end the slaughter.

Set in a 'real world' 3D environment the Golds promise this will be the smoothest-scrolling 3D game so far. This may not be just hype, as the team behind the project are the Assembly Line. Their previous projects include Xenon 2, Vaxine and the recent Coverdisk game *Interphase*.

Players have to work through 350 individually designed rooms and a mix of puzzles and combat sequences. The first task for players will be to unite the five parts of a key that will allow access to a main chamber, which in turn leads to the refuge of the mad computer. Sounds and looks complex but coming from the 'Line' it should make excellent entertainment.

COHORT — FIGHTING FOR ROME
■ Impressions ETA — March

On the heels of *Rorke's Drift*, comes Impression's latest war game — *Cohort*. Set during the decline of the Roman Empire the game pits rival generals against each other as they bid to become Emperor. Employing their 'table-top' format, the system used in 'Drift' has been refined and boasts an improved group-command facility, the introduction of a strategic map and more sound effects.

The Roman troops under your command include three different types of cavalry, infantry and archers, all of which can be used in any of the four scenarios. It's hoped that *Cohort* will retain the instant graphic appeal of *Drift* and even greater depth of gameplay, ensuring ancient battle fun for months to come.

WARLORDS
■ Electronic Arts ETA — March

An eight-player strategy game, *Warlords* aims to bring out folks' nasty side. Set in the Tolkien-esque world of Illuria, a failed peace treaty has led to a territorial power struggle between various tribes and factions. Playing one of the main tribal lords your aim is to beat, cajole and con the other players into submission.

Armies have to be raised and paid, castles stormed, demons summoned and heroes enlisted. Ancient artifacts litter the land which must be recovered from ruined temples but they can only be used by heroes, which means they are the only group you dare not offend.

Servant; you are being attacked!

HERO QUEST
■ Gremlin Graphics ETA — Easter 1991

There was a time when board-games were bored games. Then designers got clever and a new breed of role-playing fantasy games emerged, and their leader was *Hero Quest*. It rapidly became the best-selling board-game of 1989. Now Gremlin have won the rights to produce the computer version, and aim to cram in all the fantasy magic that made the original such a success.

There's a choice of four characters: a barbarian, an elf, a wizard and a dwarf. All have different skills and abilities which must be used if Morcar, the game's all round bad guy, is to be beaten. The barbarian is a seriously-hard fighter, the elf combines fighting skills and magical prowess while the wizard, the team's magic man, is steeped in arcane knowledge and the dwarf's forte is spotting traps and secret doors. The game will have ten different quests to be completed before you attain the lofty title of 'Hero'.

GODS

■ Renegade ETA — March

RENEGADE

At the 1990 Computer Entertainment Show last fall, the Renegade label was launched. The Bitmap Brothers were the motive force behind it and they approached software development, publishing and marketing from a coders' perspective.

The seeds of their 'radical' philosophy were sown when the 'pop star programmer' Bitmaps used real pop stars, Bomb the Bass, on *Xenon II* and the record company, Rhythm King, and the Bitmaps got talking. In the music business it's standard practice to promote artists first and the label second. Records sell because of the artist and not the label.

Renegade eventually emerged as a loose 'co-operative' style framework where the programmers are at the sharp end of the marketing drive and the label serves as a guarantee of quality. They hope to give coders more prominence, more control of their projects and a potentially larger share of the sales cake — but also far greater responsibility.

The tie-up with Rhythm King also helped to confirm their belief that over the coming years music, film and computing will grow closer together. Hence prominent RK musicians will definitely star on the soundtracks of future Renegade games.

The success or failure of Renegade, however, will ultimately have less to do with their business than the quality of their games. *Gods* looks all set to be an excellent start.

Gods is the Bitmap Brothers' first venture into the platform-arcade genre and it appears they've got it right, straight off. Four huge levels take you into a Greek city, a temple, a labyrinth and an underworld with over 50 different objects to collect, hordes of testing traps plus a Bitmap-style weapons shop mid-way through each level.

Your man leaps, runs and ducks like any class hero. He hurls weapons ahead and collects goodies with a quick crouch. Jumping about the platform he collects jewels, splats bad guys and goes into a switch-throwing frenzy to solve puzzles.

and it eases off, play well and it plays to match you. Creatures, traps and puzzles all adapt to suit the current state of play.

All the beasties are intelligent — not in the classic artificial intelligence sense, but they always find a way to fulfil their purpose. For example, some creatures try to follow the player before attacking, but if they lack the physical attributes to tag directly behind, they will work around the map trying to catch up.

The system has evolved from a solid design philosophy. Firstly each level was mapped out, then all the monsters, weapons and collectables were designed and their powers detailed. Only after this had been done was an editor system employed to slot them into the map, complete with 'event triggers', so everything is tweaked in situ until the gameplay flows.

The trigger system works on a principal of three variables. Throwing a switch or killing a monster could trigger an event. The game analyses performance — health, time, etc — and modifies the result. The only hint a player should get, if the system works are the different results from different tactics.

This alone doesn't sound radically different, however, from other games in the same vein. What makes Gods different is the fact that the game changes to suit you! Gods continually assesses your progress. Health, score, objects collected, position and the current game time all affect the way the game responds. Play badly

The graphics for the game are of the usual exemplary Bitmap standard, full of texture and shade. The music is supplied by Nation 12, featuring John Foxx, so 'nuff said. The first game on any label needs impact, and Gods looks set to supply that and plenty more.

SCREEN PLAY

With Amiga games becoming ever more diverse and complex, the *Amiga Format* reviews system is designed to be flexible enough to accommodate all styles and genres. We give one overall score, which reflects how good each game really is. This score is accompanied by a short list of the game's good and bad points, highlighting those elements that make it stand out from the crowd and those parts which really annoy. These points are then fully expanded and explained in the main review.

Format will, whenever possible, only review completely finished software. This means we see the version that ends up on the shop shelves, the version you buy. Waiting for finished games does occasionally mean that reviews of some Amiga products appear in other magazines before *Format*. Our review, though, will be an authorative statement of what a game *is* like, not speculation as to what it *may* be like.

The reviews team is headed by Trenton Webb and Maff Evans. Trenton had a long history in the world of 8-bit games reviewing on *Amstrad Action* before moving up into the big league for *AF 14*. Maff Evans joined the team on *AF 7*, after a heroic tour of duty with *ZZap 64*. They are backed up by a highly-experienced team of specialist reviewers from Future Publishing's crop of market-leading computer titles.

CRASHED AND BURNED!

Does Domark's MiG 29 superfighter turn or burn? P.48

Team Suzuki
On yer' bike. P.52

Lemmings
Oh no! P.62

Turrican II
Ol' Steel Shorts strikes back. P.68

Speedball II
Deluxe Pain? P.58

"I'll take the training run Sir. Ah, um, because I've never flown a MiG before, uh, I'm not even very Russian really!"

On the runway, and it is all systems go. The engines are powering up, pull away, remembering to indicate for oncoming traffic.

Banking in for a look at the target run. The big V guides you in and then let rip with the unguided missiles and blast the barn.

Mission One — Intelligence gathering. You have to get low enough to read the numbers from the side of this US sub, and try not to blow it from the ice — although it is tempting — as any hostile action will bring the wrath of the sea harriers and their missiles upon you.

MiG 29 FULCRUM

Domark £34.99 ■ Joystick, keyboard, mouse and analogue-joystick

The bear may now have a friendly face, but his claws are sharper than ever. Attackers of Gorby and Co. can no longer count on the 'F' brigades technological edge, because them there Ruskies have gone and built MiG 29s. A fighter aircraft so spiffy that the Luftwaffe are likely to buy them instead of US jets next time around.

MiG 29 is about accuracy, because with fighter planes being such fun — flying fast and blowing stuff up — the game takes care of itself. Thus Domark went to Simis — a development team with a track record of working on real air-

craft — to turn their Soviet superdream into simulated reality, and what a dream MiG 29 has turned out to be.

The scenario allows you to assume the role of a new pilot who has just joined an elite MiG 29 squadron. You have to undergo some training and then take your skills and aircraft into the fray for Mother Russia. The training lets pilots explore the wonders and amazing abilities of the MiG 29. It's best to experiment with the ordnance and plane's capabilities here, because a crash just sticks you back at the end of the runway ready for another try.

Three different combat skills are touched upon: firing unguided rockets or cannon at a defenceless barn, launching fire-and-forget missiles at unguarded vehicles and trying to shoot down a very mobile, extremely well-defended Mirage. Then, of course, there's the thrill of landing the thing and the aerobatic manoeuvres to master!

Once your pilot has earned his wings and proves that he can fly, he is sent on four different missions, each of which puts different

Mission 1

Fly over the arctic to get a real close look at a crippled US nuclear sub. Sea Harriers guard the boat. Can you get in undetected and unmolested?

Going in slow over the lake it's time to try out the guided air-to-ground missiles. Just lock-'em-up and let-'em-go.

From the missile-view you can see that the strike on the boat is a palpable hit. Bang bang you're dead!

Flying over the lake and the wreckage that was once a boat can be seen sinking below the waves. Onwards to target three.

Looking totally head up — ie no instruments visible — the target has been missed, but it's worth going in for a second shot.

From an out-of-plane view the MiG is seen screaming through a turn, lining the target range up for a second pass.

Wham bam, good night Mr Barn! The S- does the trick and it's time to turn onto way point two and some guided missile practice..

elements of flying skill to the test. If he scores enough points and is still alive and kicking then he's sent on the ultimate test which unites all these new abilities in one nightmare scenario.

The missions were supposed to reflect the more stable political world of the '90s, but with MiGs seeing active service in Iraq, and obviously the Soviet airforce, they already seem dated.

The missions, however, are just the icing. This baby puts a pilots mettle to the test, providing some of the most realistic flight fights ever seen. *Falcon* had the gloss, *Stealth Fighter* had thousands of missions, but *MiG* has 'seat-of-the-pants' flying.

When you are running either of the two 'force' models — simple or complex — the MiG has an unnervingly-real edge. You will find the plane handles according to the physics that govern things that are airborne and feels like it. The nose dips just when you don't want it to, the roll is graduated — occasionally flipping viciously, the bird slips during tight turns and the first power-dive induces a panic you'll not forget.

Nasties and dogfights

What makes MiG so good is not just the purity of the maths that support this impressive project, but the dogfighting. For the first time the enemies actively hunt you, they try to sucker bad pilots, flying in wings they attempt to set the plane of your dreams up for a clean kill. This is real gut-wrenching stuff, going man to man with a computer-generated foe. Using the 'Jump to Enemy' view it's even possible to watch their attempts to lock you up!

The *Top Gun* style of head-to-head flying is made all the more edgy because the missiles used are fallible. No guaranteed hits here just because you get a red lock. The computer gives its own pilots the same chance you have, equipping them with flares, chaff and smart moves to dodge missiles. This makes for heavy-duty white-knuckle flying. Pilots must fight for the lock, not only aiming for a red lock, but also a clean, close lock that is sure to hit. The limited number of missiles too — four generally, occasionally six — make life a little awkward for the Russian superstar. With two hits per kill and two shots — on aver-

age — per hit means you have to get some fancy cannon work in during lengthy sky wars.

Real battles are possible because each of the three aircraft you encounter are pushed to their limits in order to shoot you down. The MiG's edge is obvious but not easy to exploit, and all its incredible performance must be used if you are to see Red Square again.

Thrills and spills

Hand in hand, though, with the dramatic realism — hammered home in the dogfights — are a few weaknesses in the MiG's airframe. The most obvious of these is the limited number of missions, five in all. Luckily their depth and the sheer thrill factor do compensate some-

Mission 2

Yellow Dragon. Here you go and scare the Chinese by buzzing three of their fighters, two airbases and four tanks! But you can only fire if you're fired upon.

Mission 3

White Pegasus Some tinpot dictator has tried to take over the Straits of Hormuz. Go and teach them a lesson in sabre rattling. Watch out for those SAMs.

Mission 4

Red Rock. Strike at the heart of a counter-insurgence group operating within the USSR. There's the chance to shoot a train, jeeps and people. Unethical but fun.

Mission 5

What lies ahead on the final mission? You'll only be able to find out when you've a pilot with 500 points. Hint — it involves an arab country and a nuclear reactor. Spooky.

Target three is an airbase, it will churn out fighters until you blast the hangar. Lock and load. The closer you are the cleaner the hit.

It's ready to rock, but watch that speed as two hits may be needed to destroy such a large building.

Check via the rear-view shot to make sure that the hangar is really dead and then go upwards for the real war.

It's Bogies at three o'clock! Switch to the air-to-air missiles and wait for the red lock on his engine vents.

Turn and burn pal. Seen from the outside the dogfight gets serious as the enemy plane fights to break the lock.

The fool turns his afterburners on and gives you red lock. Launch now for a certain kill. He may launch flares though, so press on.

So what does that red knob do then?

Airspeed Km/hr.

Pitch indicators.

Velocity vector.

G-rating.

Artificial horizon.

Angle of Attack/G-meter.

Number of Flares left.

Remaining chaff units.

Cannon, S-240, AA-8, AS-7 stores indicator.

Hydraulic systems warning panel.

Heading and compass.

Waypoint indicator.

Altitude, shown in metres NOT feet.

Vertical speed indicator (VSI) ie climb rate.

Angle of attack (AOA).

Threat and target radar.

Warning lamps (left column first, from top to bottom) Hydraulic damage indicator, Nav' system damage, Radar damage, Hud damage, Low altitude warning, Stall warning, Low fuel warning, Autostab (auto pilot) on/off.

Compass
Current way point.

Airspeed.
Altitude.

VSI.
Engines.

Fuel.

what. The lack of a graphic shadow on the out-of-plane views is annoying and the need to keep locking the same target can prove fatal. The latter may be very realistic — who knows the secret of a Russian fighters HUD (Head Up Display)? — but it does handicap joystick wielders.

These elements aside though, the MiG supplies the fun side of the game with its limited armoury and the outstanding performance that it gives. When it throws some fantastic loops and high ballistic climbs you'll find it's crazy speed-based entertainment.

As a study of flight dynamics and a truly impressive flying machine, MiG 29 has an authenticity that breaks new ground in the air-simulation field. Its cockpit layout isn't as glossy as some of its competitors and the brevity of the missions leaves it outclassed by others. None though, can quite touch its edge of MACH 1 'catch me if you can' dogfights. It is just what flight fans have been waiting for.

VERDICT

90%

♦ Incredibly smooth flying graphics.
♦ A real dogfighting flight sim.
♦ Limited number of missions may hamper its long-term prospects.
♦ Accurate feeling of flying fighting based on state-of-the-art kit.
♦ Too topical?

Bye-bye boy! This is when the enemy plane explodes into a shower of debris. You have managed to win the duel in the sun.

Taking the plane down on the enemy base, you line up for final approach, steady now don't waste all that hard work.

Touchdown, you can almost imagine your stressed out little flyboy breathing a sigh of relief. And that was just training.

Ooops! A 100 mph crash illustrates what the big advantage of computer bike racing is – no gravel rash!

Gentlemen start your engines! Passing from this position can prove difficult as the opposing bikes are wider than they appear. You can race viewing from behind but then it's even harder to judge the corners!

TEAM SUZUKI

Gremlin Graphics £24.99 ■

Joystick, mouse and keyboard

Sit a normal mortal on a Grand Prix bike and they'd spend hours sliding sideways, crashing and generally sprackling themselves. Just how powerful, responsive and fast such bikes actually are is hammered home in the latest rubber-burning spectacular from Gremlin.

No easy rider!

Team Suzuki machines are frighteningly fast-racing thoroughbreds that do not tolerate mistakes. Your mission (Jim?) is ostensibly to win the world title; not quite a 'Mission Impossible' – but almost. Standing between you and Grand Prix glory are a highly-twitchy bike, the likes of Mr K Schwantz (World Champ' and Suzuki rider) and 16 courses that must be learnt off by heart.

After selecting a motorbike (125, 250 or 500cc) riders choose the control method – all of which are monumentally sensitive! There are two mouse options or joystick, with a variety of gearchange techniques thrown in for good measure. Then, and only then, it's racetime. Fools and speed freaks can dive straight into a full season, while cooler heads will use the 'Single Race' option to study each of the 16 tracks.

A race is preceded by three timed qualifying laps. During a season getting pole position is vital, and it gives riders a chance to suss out a new track. This is essential when travelling at race speed because then the road is almost impossible to read and react to. At full whack the bike has to be banked in anticipation of corners – you can't wait until the track starts to twist.

The racing is cut-throat and the speed is stunning. The computer riders defend their position well and collision or loss of control leads to near-fatal wobble. Line the bike up properly and it will hang on in corners at incredible speeds if you lay off the power. Wheelies and power slides easily come about due to the Suzuki's phenomenal acceleration, but they are hard to correct.

Damage limitation

Errors of judgement that send the bike onto the grass or into another rider costs speed and then the damage begins to set in. A percentage figure flashes on the screen and when it reaches 100% the bike is then deemed to have crashed and has to withdraw.

Unfortunately the bike's dash and handlebars (which can be turned on and off, along with the rider 'sprites') do not accurately represent the bike's width. Countless unnecessary collisions

are the result as more outrageous passing moves are tried in traffic.

Team Suzuki have picked a winner with Gremlin. If their race bikes are as sharp as these Amiga cycles then the next few Championship's are sewn up. Various tracks and tricks must be learnt for success but dedicated riders have some great racing in

Pressing the space-bar gives you a split-second rear-view shot, in classic 'life-saver' style. Problem is, looking backwards means you can't be looking ahead and...

store. *Team Suzuki* is hard to control and demands your full attention. The speed of the graphics and their apt quirks – hit the space-bar to glance over your shoulder – suit racing and are useful. Only the width problem while overtaking mars the thrill of racing the best in the world on the best in the world. ***Trenton Webb***

A collision just before the chicane has forced the computer rider onto the wrong line. Burn him now! Drop a cog, throttle up and dare to try the inside.

The Brazilian GP. Each of the 16 races is based on a real race. Realistic courses however mean there are realistically evil bends and very few straights.

This is where the real management section of the game takes place — tactical training. Select whether to play the man-to-man marking method or positional play and place the team in the correct formation.

GAZZA II

Empire ■ £24.99 Joystick

All the games for the week have been played and the results have been put into the league table. Oh dear. Gazza's lads don't seem to be doing too well — oh well looks like they could do with some extra training.

The original game based on the lad Gascoigne appeared before all the media hype surrounding the 'Spurs hero', so it comes as no surprise that a sequel should be released to cash in on his new-found fame.

Gazza II is basically a Player-Manager style game, in that you take the role of manager to set up tactics and make team decisions, while the match sections have you controlling the team when actually on the field.

Up to sixteen people can play in a European Superleague competition, with each person managing their own team. The game begins with each player entering their name and selecting their choice of team. Once everything has been set up, the game moves on to the management section, this is where players are bought and sold, and the coach decides on the training for the week.

When your team is ready for a match, you can call up the fixtures to find out various statistics on the team you are due to play. Then it's off to the match!

Division One?

Once all the week's games have been played, the results are compiled and a league table is drawn up. At this point you can review your team and tactics to improve your performance. New tactics can be learnt by the team through entering the training section. Here you can alter player positions in set pieces, set up man-to-man marking or train the players to follow and trap the ball. Once you have designed your tactics you can elect

The score's still nil-nil, but it could all change if Napoli's goalie can't stop that powerful shot from the reds! Will he miss or can he save it? Well he did actually...BAH! What rotten luck for Liverpool.

to send your team into the gym to improve their fitness, or refine their techniques by giving them extra training tactics.

While the team is getting fit, the manager can get on with the serious business of running the club, using scouts to keep an eye on the other teams and keep a watch out for possible worthy transfers. It's also a good idea to keep on the good side of the bank manager, since flagging funds can be boosted with a quick bank loan!

Fog-on-the-Tyne

Despite the ability to include a number of human players and the wide range of option screens,
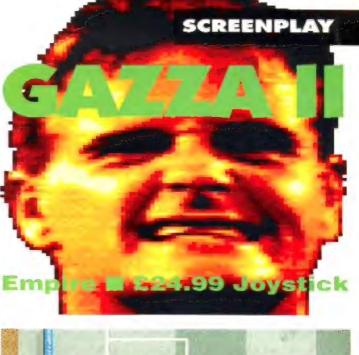
Gazza II has surprisingly little depth. The management side is limited, with the basic functions of transfers, training and a few tactics the only things really covered.

But it's the matchplay sections that really let the game down. The animation of the sprites is extremely jittery, making it a chore to move the players around the field. The control over the players seems to be minimal, with frequent portions of the game being played without any of your team members on the field. Trying to piece together a coherent attack is rather tedious, usually leaving you frustrated and lying on the pitch when the opposition put in a rather unfair tackle.

The proceedings are broken up by some terribly unfunny dialogue between Gazza and the match commentator — an option which invariably results in the space-bar being hammered to move on to the next screen.

If you're an ardent Tottenham fan, or simply worship Gazza like a god, then you'll probably want to boost your collection of Paul Gascoigne memorabilia with this, but for anyone else...well it's enough to make a footy fan blub!

Maff Evans

VERDICT

- ◆ The ability to include up to 16 human players is pretty good fun.
- ◆ The Gazza involvement is minimal, being reduced to a few intro screens and a terribly unwitty half-time chat.
- ◆ The juddery graphics are packed with a pretty uninspiring sound track.
- ◆ Poor control will leave many players somewhat frustrated.
- ◆ Only worth investing in if you collect all the Gazza memorabilia you can find.

Verdict 51%

Coming in for the attack, but there are a few defenders trying to put a stop to your run. This is where you find out whether your team has been trained enough. If not it's back to the gym!
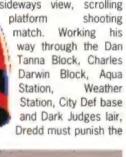
Attack of the killer Fatties! Dredd must blast Mr Blubber to keep the crime rate down. Luckily they are large targets and easy to hit. JD must watch out for the civ' behind though, because topping the innocent simply means that the crime rate soars faster then ever!
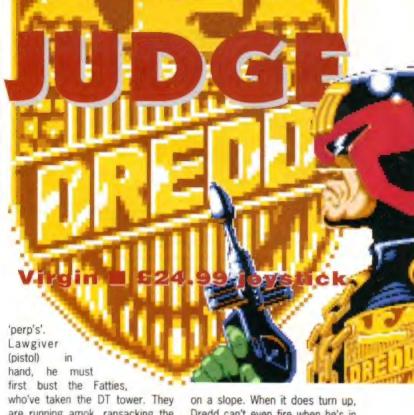
There's a price for justice, and the price is freedom! Judges are the law. We make the law, and we enforce the law. And the Chief Justice of Mega City One is Judge Dredd. A super-cop in post-apocalyptic America, he acts like Dirty Harry first thing Monday morning, packs enough fire-power to shame the Terminator and makes Robocop look like a big girl's frilli-est blouse. He's here, and he's going to punish the guilty.

Judge Dredd is a sideways view, scrolling platform shooting match. Working his way through the Dan Tanna Block, Charles Darwin Block, Aqua Station, Weather Station, City Def base and Dark Judges lair, Dredd must punish the 'perp's'.

JUDGE DREDD

Virgin ■ £24.99 joystick

Lawgiver (pistol) in hand, he must first bust the Fatties, who've taken the DT tower. They are running amok, ransacking the entire place in a mad, feverish, munchies frenzy.

Not so much heavy-metal thunder as tin-foil whistling. The Lawmaster doesn't really cut it as a 21st century law enforcers bike, it is to slow, and Dredd can't fire while he rides, a real pain in the gameplay.

Kill the guilty

Dredd's mission is to sentence (kill) the guilty and protect the innocent, as wasting 'perp's' keeps the crime rate down. If it climbs too high then Dredd has to take the 'long walk' (resign). To stop the criminals regenerating he must destroy their source of power. For the Fatties this means wasting the food dispensers, four of which are scattered through the maze of ramps and runways.

Dredd walks, leaps and shoots, or rides his mutant Harley hog Law Master. While walking he can jump up in the air or shoot the obese offenders. To get around a bit faster he can summon his bike, hop on and then race to another area. The six levels get progressively harder, as the enemies gain far greater powers, each 'block' ending in a head-to-head showdown with a gang's lead nasty.

Dredd'ed myths

Dredd is a designers dream. The chronicles of Mega City One have spawned an entire mythos, full of graphic power underlined with dark wit, thanks to its comic base. Dredd the game however, looks distinctly average. Dredd is a small dull sprite, while his increasingly outrageous foes are pale imitations of their 2000 AD selves.

Controlling the 'Judge with a grudge' is irksome. He walks slowly and has trouble negotiating slopes. Worse still, the Law Master is more of a moped/hairdryer than a high-horsepowered cycle and it won't appear when Dredd is stood

on a slope. When it does turn up, Dredd can't even fire when he's in the saddle. The Law Giver lacks punch, it is supposed to be Judges' executioner, but Dredd would be pushed even to dish out a community service order!

The graphic menace of Dredd hasn't been captured, and the game-over sequence emphasises this. When dealing with a comic classic, blocky black-and-white cartoons will not do.
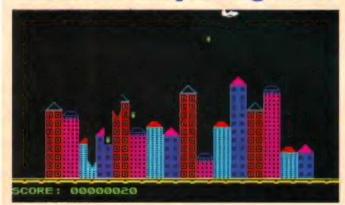
Dredd is crippled by an average games format. There is limited control over JD himself and some-what run-of-the-mill graphics. The game is tough, as the crime rate rises incredibly fast, but this does not inject tension.

Trenton Webb

What are they doing here!

SCORE: 00000020
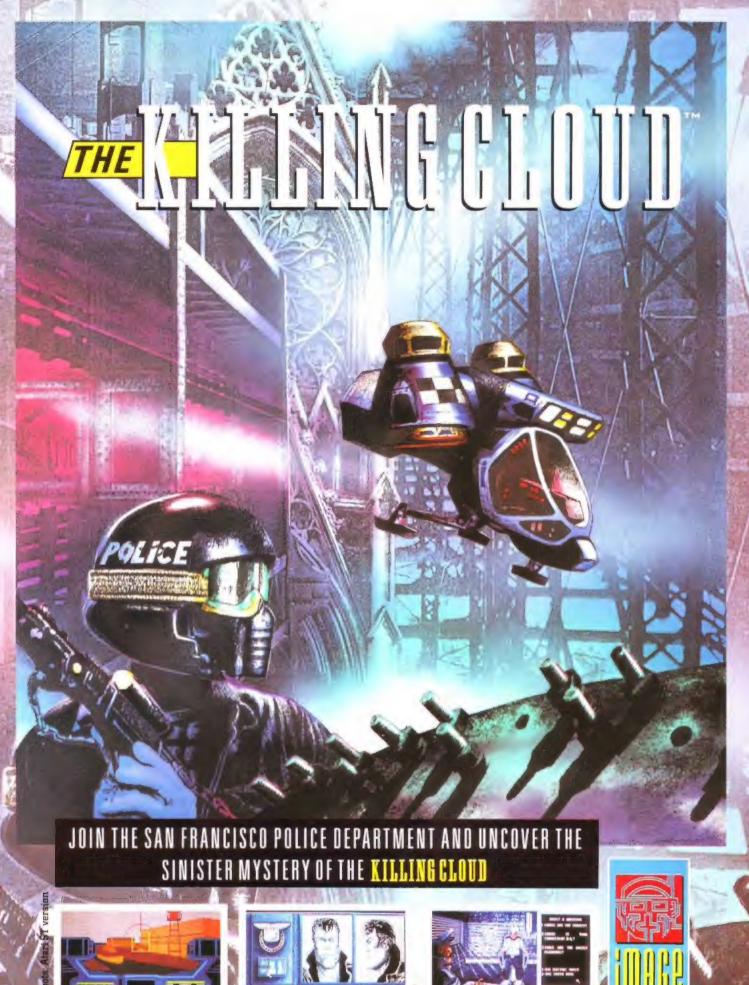
Before the main game starts, players are presented with a mock Comm's screen. Dredd can read his mail — pleas from the Justice Dept to start work and Time share ad's — or play two bonus games. Presented in a jokey 1980 ZX81 style there's a bomber and maze game. Both are hilariously ancient and make for five minutes of nostalgia. They are pure game — they have to be, the graphics are stoneage! Hidden away in the intro they pose a tongue-in-cheek humour that the main game desperately lacks.

SPEEDBALL 2

Mirrorsoft ■ £24.99 Joystick

THE ARENA

The pitch has undergone a lot of changes for the new league, including a larger arena and a whole host of scoring methods:

GOALS

The basic method of scoring.
Scores: 0x – 10, 1x – 15, 2x – 20.

ELECTROBOUNCE

Charge the ball up so that opposition players are automatically tackled when they try to pick the ball up. The charge lasts until the opposition gain posession or the ball stops moving. The effect can be increased so that more players are tackled with the Multiplier.
Effect: 0x – 1 tackle, 1x – 2 tackles, 2x – 3 tackles.

WARP GATES

Transport the ball to the warp gate on the opposite side of the pitch.

SCORE MULTIPLIER

Throw the ball up the ramp to increase your scoring-rate first by 50% (1x) and second by 100% (2x). The opposition can cancel the multi-plier by throwing the ball through themselves before boosting their own rate.
See the scoring methods to see the effect of the Multiplier.
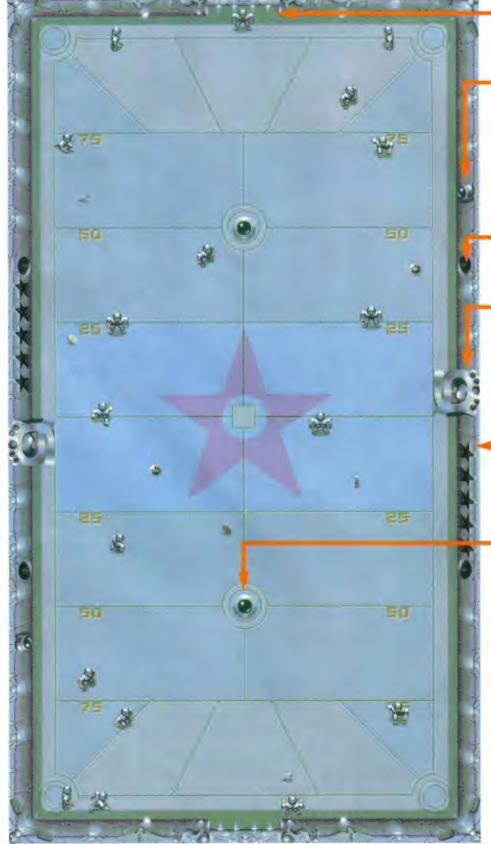
STARS

Give a devious method of scoring extra points, since a useful bonus is gained for hitting all five.
Scores: 0x – 2, 1x – 3, 2x – 4.
Bonus: 0x – 10, 1x – 15, 2x – 20.

BOUNCE DOMES

Send the ball flying away and give a bonus score when hit.
Scores: 0x – 2, 1x – 3, 2x – 4

hose of you who are avid fans of American Football may remember back in the late 70s (1977-79 to be precise) when certain players were deemed simply too dangerous. Several rule changes and penalty legislations had to be brought in to maintain the players' safety, covering dangerous tackles and blocking moves and some rather lethal attacking practices.

Just imagine what would have happened if things had just progressed even further into the realms of violence. Players would be in danger of severe wounding, and maybe even death, resulting in much lower crowd attendances — a prospect which could be damaging to the game.
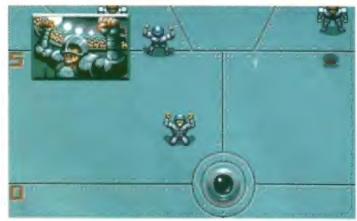
Desire for violence

Now we take a leap of just over 100 years into the future. The nation's top sport of Speedball has progressively become more and more violent. With few rules to govern player safety and even fewer to cover etiquette on the pitch. Some of the more powerful teams began playing with unfair advantages — drugs, cybernetic prosthetics and other rather dubious gear — resulting in excessively violent, scrappy, unentertaining games watched by only a few hard-core fans.

When the crowds began to decline, the sport was forced underground, until five years later, when the powers that be saw a way of restoring public support of the game and earning a pretty penny to boot. Thus, in the year 2100, Speedball 2 was born.

Key members of the underground movement were tempted to help set up a major league, with new rules, new teams split into two divisions, improved player-armour for safety and last (but by no means least) an entirely redesigned playing arena to bring maximum entertainment to the punters.

Player manager

The game can be played in a number of ways. You can play as the team, trying to climb up the divisions and win the league; as the team manager, giving training and coaching decisions then sitting back to watch the team in action; or just play in a straight knockout competition to win the Speedball Players Association Cup.

Whichever section you decide to choose, you need to get to grips with the training section. This involves spending money on various pieces of equipment for your team members to train with. You can train-up a single player, a group formation or the whole team. If you want to add some spice to your team, then check out the transfer market to get yourself a star player. *Maff Evans*

After a blinding attack on goal, the young Speedball players celebrate their success rather enthusiastically. However, there isn't much time to reflect on their skill — the opposition are bound to be rather steamed at going a goal down, so the attack will be on!

Violent sports are bound to have casualties, so it's a good job that the ambulance droids are on hand to cart the injured away.

This ugly bunch are the team that could bring a manager like you victory or leave you wallowing in despair. It's time to get some training done to sort out the men from the boys!

The top teams in the league will be pretty tough to beat without training, so enter the gym to boost your team's ratings. Here we see the forward players' attack rating getting a bit of a bump-up.

VERDICT

- ◆ Superb graphics and sound perfectly evoke a tough, futuristic atmosphere.
- ◆ Marvellous attention to detail and depth of play make the game a thoroughly involving experience for weeks.
- ◆ Enough manic action to keep even the most hardened sports fans pounding away at their joysticks for hours at a time.
- ◆ The best future-sport available so far...It makes Gridiron Football look like the Royal Ballet!

WELCOME TO THE TERROR-DOME

The original *Speedball* is now pretty much a classic Future-sport game. Now, two years later, we have the sequel, we ask ourselves 'How does it match up to the original?'
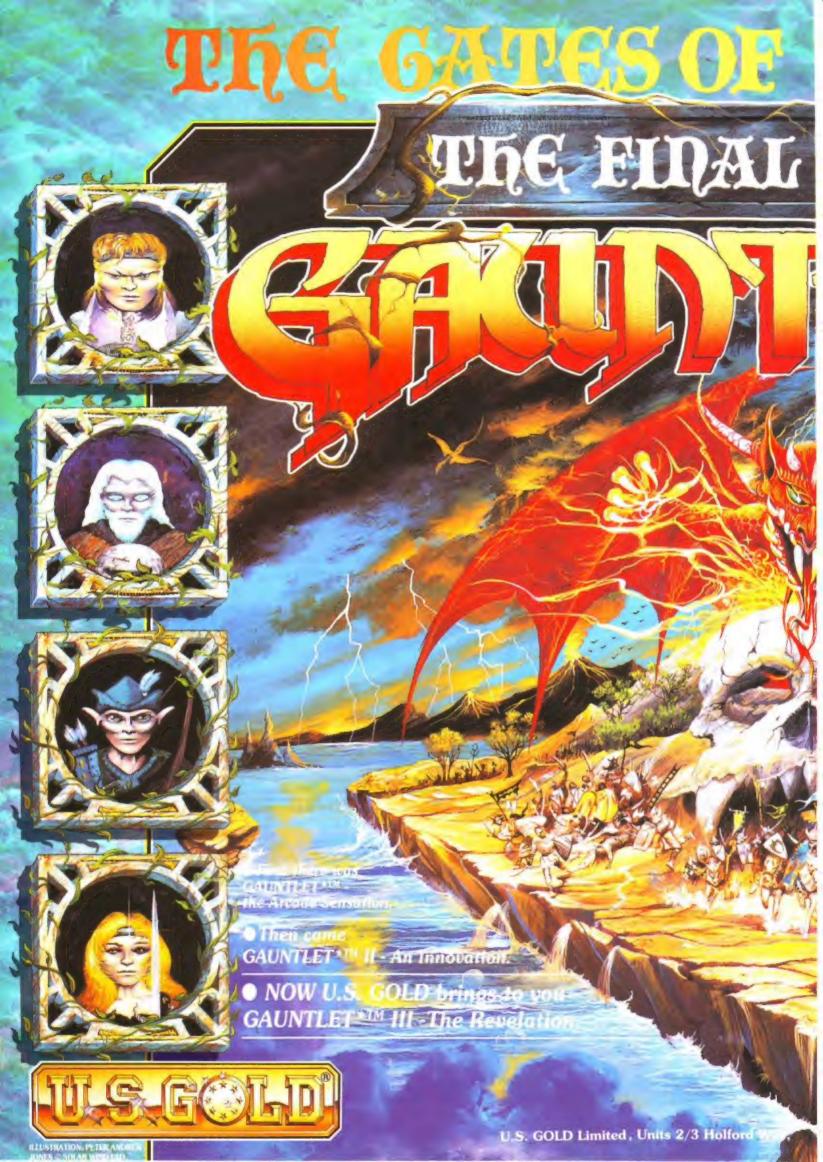
The truth is it's not as good as the original...it's miles better. The graphics have a much more aggressive feel, as does the gameplay. However, instead of a straight blast the ball up the pitch towards the goal, there is a lot more thought needed to succeed. Mastering the various methods of scoring is almost essential,

otherwise you could find yourself at the bottom of the league without even a point to your name!

The Bitmaps have packed the game with a whole host of little extras, such as the ambulance-droids that come on to carry off injured players, the option to save replays on to disk and an extremely annoying salesman who shouts out 'ICE-CREAM!,' at every possible opportunity.

Never before in the *AF* office has so much shouting, cursing and wrenching of

joysticks been heard with such ferocity — and we get worked up over our games in these here parts.

If you're of a faint-hearted disposition then steer well clear of this aggressive and exciting sports game.

If, on the other hand, you like the clash of metal on metal, the grunt of an opponent as he hits the deck and the roar of the crowd as you score a goal then *Speedball 2* is an absolute must. It's one of the best sequels to appear for quite some time.

94%

The Lemm's drop into deadly danger. Those three pillars would be no problem if you had three bashers. However, you only get two and have to make do with a miner to dig down diagonally. Hurry and get that bridge going though, here comes the crowd! If it ain't finished in time the lemm's will be! Oh no!
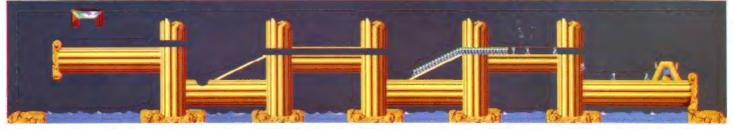
O h no! The lemmings are dropping into deadly danger! Only you can give the necessary instructions to save their little lives and guide them to the safety of a

LEMMINGS

Psygnosis ■ £24.99 Mouse

This one's a poser. Do you go over under or through? Well bashing the pillars seems to work, but it is the bridges that will see the green folk to safety. An easy level this one. It's is matter of timing rather than mental dexterity. You also have to save 99% of the 100 starters. Best of luck!

cliff-free zone. Are you up to giving lemming aid?

Each level begins with a huge trap-door creaking open, then down tumble a herd of dungaree-clad, green-haired lemmings. Being folk of little brain, and left to their own devices the little lemm's do what they do best: die! Why? Because those cruel people at Psygnosis have crammed each level with dangers that are absolutely guaranteed to kill the terminally stupid, ie lemmings.

Doing the do

The lemm's can only be saved if you take control. By giving lemm's certain tasks to do it's, just about,

feasible to shepherd the bumbling bunch to safety. A menu bar below the game's screen offers a number of icon options. Through it, any lemming can be changed from a standard 'runner' into a 'do'er', by selecting a task icon, then clicking on a specific individual. Lemm's can dig, build, bash, climb and tunnel. They can even use parasol parachutes when presented with the kind of cliff-drop that has made them famous.

The road to sanctuary, though, is never smooth; pot-holed by one simple fact: there are never enough of the right commands! On

a level full of ravines it's a safe bet that there's one too few bridge-building commands to straddle the gap. So cunning plans are the order of the day to ensure enough — a percentage of lemmings must be saved on each level — lemm's reach safety.

Run away

In their way are chasms that must be spanned, hills that have to be tunnelled through and fatal falls that must be guarded by suicide-blockers. Once they are down they start running and will continue to charge in the same direction until they hit a solid

object — either a wall or a blocker — or if they run out of floor. Once past such a peak, the little lemm's can only survive a short fall. If the

distance is too great for them they sickeningly splat in a shower of lemming drops.

Embroiled in a frantic race against time, you have to juggle blockers, bashers and floaters as well as the main herd. Taxing and tense it makes for incredible gaming. Succeed and your grin will shame a Cheshire cat, fail and you have to try again.

Lemmings thrives on panic, lateral thinking and accurate mouse work. As commands are clicked directly on the lemm's, accuracy gets tough when the little beggars bunch up. And one mistaken mouse click can cost the whole herd their lives.

The frantic high-speed thinking is underpinned with the tension of timing. The best example of this is waiting for bridge-builders to span a gulf. Each command only lasts for ten small bricks, after these are laid the lemm' reverts back to normal and runs onwards. Fine if they've bridged the gap, fatal if

The blocker on the right of the hill is set to explode (one second left on the countdown). However the disastrous run is continuing as most of the lemmings are trapped with a downward digger. One miner has the right idea and he is on his own now. Time for mass suicide, hit the mushroom icon twice to quit this level.

they haven't. To stop such suicidal tendencies and lengthen the bridge, you have to wait until the tenth brick is laid. Then, as the lemm' turns and looks bemused, you have to slap another bridge-builder command on them.

Cliff hanger

Why, however, should anyone want to spend time and mental anguish saving the lemm's? The answer partially lies in their excellent animation. Although only a few pixels high, the little folk have real character. They hold their heads in despair if instructed to self destruct and tap their toes as they get bored of blocking.

The lack of one main protagonist and, instead, focusing upon a collective group who are controlled via icons, puts this firmly in the 'god game' genre. Most important, though, is the blending of this 'god game' approach into the obvious puzzle formula. The resultant mix transcends the normal limits of shapes, pipes and balls that have held back the likes of *Klax* and *E-Motion*. The lemmings supply the intrigue, while the puzzling levels gives the grey matter a hard time.

Lemmings is a hoot to play and quickly becomes a dangerous obsession. Four different styles are available plus a two-player mode. All call for a clear head and a cool hand if you are to finish a level and gain the next password. There are over 160 levels, each of which has more than one solution.

You must decide the best way to solve a level, given the commands available, and any favoured personal approach. There is, as the old saying goes, more than one way to explode a lemming.

Trenton Webb

Menu masters — for the way lemm's live today!

On each puzzling level you will have a different number of 'icon' commands with which to guide the little people to safety. Just click on the icon you want to use next then click on the lemm' you want to command.

Climber — this can be used at any time and once a climber always a climber. Given this command a lemm' will scale any vertical surface like Spiderman — albeit a very small green-haired one.

Floater — normally great falls are fatal for lemm's, just like in real life. However, click this command on a lemm' at anytime and if they fall, they open a brolly and float gracefully to Earth.

Bomb — to remove a blocker or any lemm' who winds you up, click it on them. After a five-second count down they explode. Ha!

Blocker — an essential but fatal command in the hectic world of Lemminging. The lemm' will stand where clicked, spread his arms and stop his fellows from running in that direction. The only way to remove a blocker is to use the 'bomb' function.

Builder — these little guys will immediately start building a bridge that rises at an angle of 30 degrees from the floor. Each such command lasts for 10 bricks, after which the lemm' reverts to a normal 'runner'.

Basher — when a lemm' hits a solid object, at that precise instant, slap a basher command on them and they'll bash their way through it. That is unless it is made out of metal, then they get bruised claws, turn around and run off.

Digger — useful begger, Johnny digger! Click this one on a lemm' and they immediately start to tunnel straight down. Again if they run out of floor or hit metal they stop.

Miner — starts any lemm' digging diagonally down until they hit metal or run out of floor. Pick 'em when you can't go over, or round an object and have to go under.

Armageddon — Click twice on the mushroom cloud and this quits the level, killing all the lemm's in one huge communal explosion.

Hmm! The trick here is to send a lone lemm' ahead of the pack laying bridges. It calls for split-second timing to re-activate the bridge command before he starts to sky-dive. Getting to the door (far right) will take some nifty bridge work, and we're not talking about dentistry!

We all go up together!

When you turn a lemming into a blocker they are doomed. Unlike other commands it can not be countermanded. The only way to shift them is to ask them very politely to self-destruct. Then the poor doomed chap, looks about in amazement as a five-second timer counts off above their head. When the clock hits zero they hold their heads in despair, and then oblige by blowing themselves to bits. Rather usefully they also take out part of the landscape.

A much more spectacular option is Lemming-Armageddon. Hitting the mushroom cloud twice sets off a mass destruction, and the lemm's on the level switch to self-destruct and explosions splatter the screen, effectively quitting the level so you can start

Two doors to aim at and it still isn't your lucky day. Those bars don't support the weight of a lemming, and they plummet to their doom in the fiery furnace. Those gas jets are more than a pain in the butt too.

VERDICT

92%

♦ Incredibly original concept that is well worked into a really great game.

♦ Graphic magic, despite the small sprites.

♦ Huge game with incredibly addictive gameplay.

♦ Amusing and simultaneously frustrating. Perfect.

Cavalry engage the computer's forces (which are moving down from the top of the screen). Unfortunately, when you put cavalry up against anything other than the weakest infantry, it performs badly.

Here two units of elephants advance under the cover of archers. Whenever a unit is selected, a summary window opens up and displays details, as you can see here.

ANCIENT BATTLES

CCS £24.95 ■ Joystick

In this entirely computer controlled scenario, you can see massed troops struggle for position. Believe me, they're gonners.

Some units benefit from staying in formation. These guys didn't. They're about to become ivory ornaments.

The programmer, R T Smith, CCS and *Ancient Battles* are almost synonyms of each other, they certainly go a long way back. The games emerging from these ingredients have always been identifiable at a glance and have always been historical war-games, for some years presented as direct translations of their board-game antecedents. Sometimes they broke up campaigns into battle-sized portions. They were intriguing as much as entertaining.

Ancient Battles is more ambitious than its predecessors but not so you'd notice if your curiosity hadn't tugged you towards the strange fascination people have with toy-soldiering.

You can take your choice of the world's chart-topping armies of the period, match them up in pitched battles against computer-controlled forces or an army controlled by a friend and do unto each other what comes naturally. Your choice of imperialistic or barbaric crew is made easier by well summarised notes on everyone from Abyssinians to Hoplites to early and late Romans and many others. These notes explain the conquests of certain armies under different leaders and what the make up of the armies would have been. The functions of troop types in armies is also briefly, but illuminatingly, touched on.

The aim of the maim

What you need to give you a chance of getting something out of the game, can be picked up by a glance at the rule book, though this itself is somewhat Spartan (sorry) and unappealing to the casual browser.

Your rapidly-expanding knowledge of the highlights of the Human Butchery show can be put to direct use at the beginning of your game thanks to Smith's incorporation of that time-honoured war-gaming phenomenon: the army points system. An army points system is used by war-gamers as a kind of abstract rule of thumb. It assigns certain numeric values to kinds or qualities of troops (from untrained rabble to veteran elephant cavalry). It also restricts, slightly, the number and combination of units a player can include in a force. Therefore, two players with forces of similar points values can be sure that any game they play will be a roughly even match, while leaving them the opportunity to design a force around use of tactics.

And that's pretty much all you need if you want to get into what was going down in Mesopotamia two-and-a-half-thousand years ago. In the scenarios the units resemble chess pieces of the toy soldier variety more closely than the cardboard markers that strategy programmers have often opted for in the past. You move them around with a crude but workable cursor control mechanism over a battlefield the program allows you to modify (as long as it's green).

It's a no-frills game that might make an enthusiast of you. Most likely of all, is that *Ancient Battles* will be snapped up by people who already have *UMS*, either as something to offer a diversion or so that they can transcribe forces and scenarios into *UMS* itself. Either way, that's not a lot of people.

Sean Masterson

VERDICT

- ◆ Colourful chess-piece graphics but lacks polish.
- ◆ Crude cursor control mechanism.
- ◆ Limited potential for widespread appeal.
- ◆ Subject and scale make it worthwhile for those with an interest.
- ◆ Will teach you just enough about the subject to bore less well-informed friends stupid.

69%

Where the manual says you can design your own battlefields, this comes down to placing scenery (and not a great variety of it at that).

The toy soldier graphics are actually pleasantly colourful and bear some token resemblance to the troops which they represent.

SPO**4D**RTS
BOXING

Now Available for the Amiga

"4D Sports Boxing is absolutely brilliant... the boxers move pretty much like their real-life counterparts ...Here goes. Ooooooof! (Crunch)." ZERO HERO 90%

"...This is the best game I have ever played..." -Don Mattrick, President of Distinctive Software Inc

"Seconds out...Round One! The crowd leap to their feet as the fighters rain down on each other... was that a stumble? YES! He's down...what a knock out. This is boxing at it's absolute best. What a brilliant fight."

"4D Sports Boxing is simply one of the best sports simulations around...Superb." The One 90%

Do you want to box in the Fourth Dimension?

Mindscape and award winning developers DSI bring a new era of games to your home computer with the 4D Sports series. Here the 4th Dimension is realism and the action is amazingly real.
Modelled and simulated on real human movement, 4D Sports Boxing is the most accurate sports simulation ever written. 4D Sports Boxing lets you create and save a camp of up to ten of your own boxers.
You dictate how tall, how heavy and how strong they are.
Next you train them and build them up into lean, powerful fighting machines
then it's time to enter them into their first fight.

MINDSCAPE

The shattering of suburban normality. The destruction of those middle-class values which form such a thin veneer of respectability. Cosy little sheltered lives torn apart.

Exterminator isn't about this at all. Basically it's situated in a cul-de-sac in a leafy Chicago suburb which has been overrun by a large number of insects. Something has to be done, so a van delivers a large hand to crush the little pests out of existence. Your job is to control that hand.

Rentokill

You enter the house and pause to glance at a floor plan of the building. You then move room to room killing the bugs which have taken up residence there. But it isn't as easy as that. You also must contend with toy tanks which, as often happens in Chicago suburbs, have

Here are a couple of helping hands to aid you in the kitchen. This shot is in the two-player mode where there are a pair of hands on-screen at the same time so you and a friend can lace the attacking moths.

EXTERMINATOR

Audiogenic £24.99 ■ Joystick

come to life. These shoot tiny pellets around, which get in the way and confuse matters further.

The attic. Traditional home of all things nasty. There is also a spray can flying back and forth. Get it and your troubles will be eased considerably.

Each room is cleared once you have changed the floor tiles in one 'lane' to a certain colour. It sounds complicated, but it is easy enough once you start playing. You change the tiles by killing moths, bugs or bees – whichever happen to be over those tiles at any specific time.

SLICES OF A DIFFERENT LIFE

This coin-op conversion is all about a cul-de-sac of human-deserted houses, each filled with manic toy tanks, very strange-looking bugs which are crushed, swatted and pounded by disembodied hands in order for the squares of lino on the floors to change colour, which make patterns of lines that free the hands to go on to other rooms and houses in search of pests.

Tomatoes whizz around, Coke cans dash about in panic and blue marbles fly out in

A wasp is also angrily buzzing around. If you accidentally crush him a great bolt of pain slams into your hand, then up your arm and out of the top of your head. Actually this is artistic licence, because you don't actually have arms (or a head).

Other items can help. Your powers can, if you're in the correct part of the screen, allow you to fire long distance marble-type things at the bugs. There is also a usable fly-spray to be collected.

Once you've cleared all the rooms in one house the van will deliver you to the next dwelling in the close.

The same task will face you there, and by now you'll need to be watching your juice meter; this runs down continually and contact with a wasp speeds it up.

streams from the outstretched fingertips of the hand. A wasp is shooed away by circular movements of the hand, and small brown dodecahedrons are grasped to add extra juice to the hands of the Exterminator.

Remember kids, just say no to drugs.

Here in the garage the story is much the same as everywhere else, even in this supposed haven of normality. Bugs are everywhere. (This isn't a reference to the ubiquitous CIA).

Python-esque weirdness

Digitised sounds fill the air, and the moving floor tiles and whizzing moths, bees and hands create an action-packed effect. Apart from this effect there is very little. Each house is exactly the same and there aren't many different bugs.

Once the Python-esque acidic weirdness has worn off, you are left with a mediocre game that goes nowhere (except next door). And it's the same there as well.
James Leach

Ahh, the bedroom. But there is no marital bliss being cemented here, instead a wasp is busy stinging the amputated hand. Owwwww! (As they say).

VERDICT

- ◆ Lots of things to see, but not much to do.
- ◆ Nice effects and clever little touches don't make up for lack of gameplay.
- ◆ If you are interested, the difficulty level is pitched about right, however. It's not easy.

64%

After speeding through the tunnel, Turrican leaps from the cockpit of his super-fighter, ready to take on more of his deadly robot foe.

There are still quite a few diamonds around that need to be collected, but firing into walls isn't really the way to go about finding them!

TURRICAN II

Rainbow Arts ■ £24.99 Joystick and Keyboard

Still in the caves on the first level, but there are all manner of nasty things after you already. If the whizzing, circling, killer bugs were'nt enough, that deadly metallic snake is spitting some serious laser death! Turn your powerful weapons onto it to proceed with your heroic quest.

ast year saw the release of *Turrican* – a strange hybrid platform game and progressive shoot-em-up. The plot told of a heroic character who had to travel deep into alien territory to release his world from the oppression of the evil Morgul — the so-called three-headed incarnation of evil.

After a titanic struggle, Turrican's mission was successful. Morgul was defeated and the planet was saved. But Turrican's troubles were far from over...

Mayday!

For many years, a far off race on the planet Landorin have been locked in a deadly battle with a tyrannical force known as the Machine. The rebels managed to destroy their central complex, which was based on an artificial moon orbiting their planet. However, the Machine's robotic forces were still left on the planet, gradually taking over the world — even as deep down in the surface as the secret shelters that the

Ha! That little metal beastie didn't put up much of a fight! Now then — break through this wall and....ON TO PILLAGE!

Turrican has managed to blast a droid emplacement, so he can now drop into the enemy complex and start doing some serious damage!

Landorins had built to protect themselves underground.

Just before the last remaining Landorins left the planet, they sent out a Mayday message — a message that was picked up by none other than Turrican.

You take control of Turrican as he lands on the outer surface of Landorin. Since his last mission he has been streamlining his abilities and improving his armour. He's still armed with the multi-purpose laser cannon, but a host of 'alterations' have been made:

SURROUND WEAPON — this replaces the 'Lightning Beam' that was present in the original. It fires a stream of laser bolts that can be twirled around him.

PULSE LASER — fires a large spurt of flame from the rifle. Its size depends on the power level of Turrican's weapon.

MULTIPLE — can now fire scatter-shots of up to four beams.

BOUNCE — this fires a bolt of electricity which breaks up and bounces around the caverns when hitting an indestructible obstacle (walls, etc).

All the weapons can be charged up or improved by picking up the pods that are left in hidden locations by the Landorins for just the kind of hero that Turrican is (see POD-POWER box).

Deeper and down

To begin with, Turrican must move around the planet's surface destroying any enemies he may come across. Later, secret entrances into further caverns must be found, so that Turrican can make his way deeper into the planet and stamp out the enemy threat, as well as having to find and steal a spaceship to navigate the speed tunnel — a deadly corridor that is packed full with deadly Machine guards.

As Turrican works his way deeper and deeper into the planet, the Machine guards get tougher and meaner, throwing all manner of defences at you to try and stop your advance into their newly-claimed territory.

However, even if you do get stuck in a small space with a seriously nasty guard, there's always the 'Death-Blossom' type weapon which unleashes a few seconds of laser death at any enemies that are in the area.

Turrican has stolen an enemy fighter and now turns the tyrant's weaponry back on him. Those droids still look pretty risky, though.

POD-POWER

- ● Shield
- ● Laser
- ● Surround Beam
- P Power-Up
- ● Multiple
- ● Bounce Beam
- L Energy

To make the most of Turrican's extensive weapon skills, you will need to pick-up sets of power-pods. These will switch your weapon type or beef-up an already operational one. Many of these are hidden in invisible blocks which are only exposed when fired at — so keep those guns blazing!

Mark II

The original *Turrican* was an enjoyable blast, receiving a pretty healthy 88% in *Amiga Format*, and the sequel boasts even more of the same. Bigger levels, more powerful armoury and improved effects are just a few improvements the sequel has over the original.

The animation of Turrican himself and his weapons are much smoother, and the robots are far more varied and interesting. Another point is that there is a lot more scenery for you to explore. Whereas the original had you trying to travel to the right of the level as quickly as possible, *Turrican II* has you searching all manner of blind alleys trying to find the exit!

Despite these impressive changes, the basic game design is very similar to *Turrican*. The characters may look different and there may be extra weaponry and levels, but the gameplay itself hasn't been hugely modified or improved. This will come as good news to those who are avid *Turrican* fans and want to play more of the same kind of stuff, but your average game-player may find the sequel game slightly disappointing.

This is a real shame, since the framework of the game is very solid and enjoyable, but simply making a few cosmetic changes and throwing in a couple of extra features just isn't QUITE good

enough these days. Still it's a fair enough blaster which should appeal best to all those who don't own a copy of the original.
Maff Evans

VERDICT

- ◆ Colourful, parallax backdrops and well animated sprites create a good atmosphere throughout the whole game.
- ◆ There is a lot to explore and discover while playing, which should keep map-makers busy!
- ◆ A pretty high-class shoot-em-up with plenty of frantic action, but it's rather too similar to the original *Turrican*.

80%

Poor old Dirk-the-Daring isn't having a very good time of it. No sooner has he saved the day and the Princess Daphne, than she's spirited away by the thoroughly nasty Wizard Mordroc. So with a swift wiping of the brow and a quick breather, Dirk leaps into his chamois-leather strides, picks up his broadsword and legs it off to get his delectable true love.

Dragon's Lair II is an animated adventure, of sorts. You control the main character Dirk on his mission to retrieve Daphne. Dirk is controlled by either the joystick or the numeric keypad. His movements, however, are extremely limited; an animated scene plays and by watching the action, you have to move the joystick in the right direction at exactly the right time. So for instance, if a snake appears from the right you have to work out what course of action Dirk has to carry out to avoid or kill the snake.

Let's do the Timewarp again

The action starts with Dirk sat around the breakfast table with his family. As he tucks into his porridge his mother-in-law decides that he's not a very nice person and proceeds to wave a rolling-pin at him. Because the woman is only slightly smaller than a large planet, the obvious thing to do is get out of the way as quickly as possible. Thus you have to move the joystick in the right direction (in this case to the left) and at the right moment (when she starts waggling her rolling-pin). Move at the wrong time and Dirk will get a teeth shattering smack on the head. Move at the right time and he'll leap out of his seat and leg it out onto the castle's drawbridge.

Life starts getting tricky for Dirk now. Most of the scenes that follow involve multiple moves to escape death. So for example in the second scene on the drawbridge, just when you think you've completed it, Dirk will snuff it at the hands of some large snakes.

An animated concussion

The major problem with this game is the boredom factor. Because you only have a very small part to play in Mr Daring's adventures, you come up against the 'so what' factor almost immediately. It all seems so pointless. Some of the screens are hard to solve and you find yourself endlessly running through the same animations, vainly waggling the joystick in every direction known to man. You scan the manual hopefully in case there's a clue and try wacky movements like throwing the joystick with great force at the wall.

The animations themselves are superb and are greatly improved by some wicked samples. However that is all this game is: a series of nice piccies and nice sounds strung together and called an animated adventure. However the crowning glory is the price of the whole package. I mean, I know it's six disks, but come on, fifty quid!

Andy Hutchinson

And its all gone terribly wrong. A clout around the head with a hefty rolling-pin and Dirk is truly shattered.

Blimmin' hell, I've heard of persistence, but this mother-in-law just won't take 'clear off you old battle axe' for an answer.

It's the first time out for this British record-holding chasm jumper, but has he gone too soon... quite remarkable.

Dodging the snake, Dirk attempts the world-record free-fall. Like any real man, he hangs onto his groin and prays.

You are Dirk-the-Daring and your mission is to save the ravishing Princess Daphne. With a jaw that square, you can't go far wrong. So broadsword in hand, do battle with snakes and large mother-in-laws.

DRAGON'S LAIR II TIMEWARP
Readysoft ■ Sullivan Bluth
£44.95 ■ Joystick

All these mouths to feed and an in-law with the complexion of a hippopotomous on steroids. Any minute now Johhny Morris will walk in and save Dirk from this potentially catastrophic situation...'If I could talk to the animals...'.

VERDICT

65%

- ◆ Absolutely wicked, attention-grabbing animations which would put many a real cartoon to shame.
- ◆ Zillions of crystal-clear samples which add much to the flavour of the game.
- ◆ Far too little for the player to do.
- ◆ Ultimately boring, repetitive and far too expensive.

The goalie's response is always cautious unless you specifically send him diving for the ball by squeezing the fire button. By and large, once a player gets this far, the goal is as good as scored.

WORLD CHAMPIONSHIP SOCCER

Elite £24.99 ■ Joystick

Assuming you know everything about the inflated bovine bladder and the *Colin Moynihan Identikit*, I'll skip the rules of soccer and get on with what this game has to offer. *World Championship Soccer* offers a choice of one-off and one or two-player games (test matches) of football between international sides or a competition series not dissimilar from the World Cup itself. It's an elimination league split into six groups. Teams take part in three days worth of qualifying games. Extra time is never added on. In the event of a full-time tie, penalties decide the winner.

Whether you're playing a friend or the computer, you can always check on the progress of other teams between matches and this is where *WCS* scores highly. Where it doesn't show ingenuity is in its striking similarity with *Kick Off 2*.

Kick off

The inevitable comparison comes from the fact that Elite's new soccer game uses a free-scrolling overhead display of around one sixth of the pitch, uses floating arrows to indicate selected players and boasts a superimposed inset of the whole pitch to display the positions of the players, not to

Goal! "It may have been going wide but nevertheless it was a great shot on target." (Terry Venables) "Let's close our eyes and see what happens." (Jimmy Greaves).

mention similar joystick control features. For gameplay alone, the comparison is unfavourable to *WCS*. Tackling and dribbling the ball seems more difficult, as does taking a corner. Passing is easier but the old one-two still takes some practice to pull off.

All the world's a stage – all right then, all the world's a football pitch, at least in *WCS*.

The twenty-four teams you have stored seem to have something in common with their real-life counterparts. In other words, don't take on Italy in your first test match or you'll lose eleven-nil.

Lineker

It's nice to be able to pick out a team of players whose names you will recognise from a full-size squad, even if you can't be certain that the Lineker and Gazza you get on the pitch really will play like the men themselves. It's a shame though, that you're limited to two forwards, four mid-fielders and four defenders, no matter which team or which squad you pick. Surely, along with the rest of the selection process, this would have been one of the primary reasons for choos-
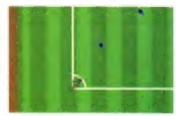
Select your own team from the best squad available – but you're stuck with one formation.

ing *WCS* as opposed to one of the many other contenders in the football-simulation field.
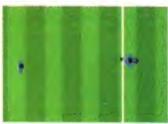
But the game is eminently playable, slickly presented and adequately documented. The gripes listed though, are inevitable. From Elite's point of view, they've converted a Sega game and couldn't therefore bolt on anything they might have liked to. But from the buyer's perspective, you'd have to be seriously interested in soccer games themselves to add this to any similar titles in your collection. If you haven't got a soccer game yet but are thinking about it, *Kick Off 2* has the better gameplay but *WCS*'s competition features offer the solo player a considerable challenge. **Sean Masterson**
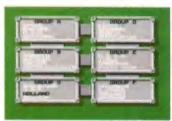
If your defence isn't up to scrath, you'll see a lot of this part of the pitch. Not a pretty sight.

Corners are difficult at the best of times. *WCS* doesn't make them feel any more controllable.

A throw-in fails to attract much attention from players. Once on the pitch *WCS* gets very physical.

A sight to fill a solo player's heart with joy: the knockout-competition summary screens.

VERDICT

- ◆ Fine presentation matched by good playability.
- ◆ Control is fiddly at times.
- ◆ Interesting but limited selection features.
- ◆ Competition feature will mainly appeal to solo players.
- ◆ Not as good as the opposition on the pitch.

80%

Picture a solid 3D game hero who roams around a 'real' environment, who can search buildings for life-saving kit, commandeer vehicles and also be killed by the local wildlife. Hunter is just such a hero, letting you experience an espionage battle between the heroic greens and the evil reds, at first-hand.

The Hunter you control is a polygon guy; a Max Headroom figure with legs. The joystick sends him scuttling around a 3D landscape simply by pushing it in any direction. Then, using a mouse-summoned menu, Hunter can gather any useful kit that he finds, be it a map, satellite reconnaissance, gun, cash or food.

Islands in the sun

Vehicles and buildings litter Hunter's island home. These mold the action, arcade style, of wandering destruction with more traditional adventure modes. Hunter can talk and give any recovered objects to the folks that he meets to buy information about where he should head next.

When Hunter discovers a vehicle, all he need do is walk into it and push the joystick forward to start the engine. Hunter then drives the vehicle wherever you want him to go. Jeeps, helicopters, tanks, hovercraft, rocket-boats, bikes and sailboards can be found all over the world. Some are vital components in the missions he has to fulfil, some are superfluous, but still fun.

Breaking and entering

Buildings provide the game with adventure overtures. Hunter's main mission requires the location of special objects in a certain sequence, which once retrieved are either given to characters or used to complete a specific task. All these are hidden in buildings scattered throughout the land. Others must be destroyed. To enter a structure Hunter just walks

A successful Hunter travels fast. In the game a vast array of vehicles are all waiting to be driven from A to B destroying as much in between as possible. Two of the best are the tank and attack chopper. Both have their own armoury, which can deliver a powerful punch. They are also targets for Red's missiles though!

HUNTER

Activision ■ £24.99 Joystick / mouse / keyboard

up to the doorway and appears inside. No blank polygon rooms here, each has a theme; churches have altars and houses occasionally feature working washing machines. The objects are always obvious and easily retrieved by walking into them. Automatically stored in the inventory, they are then used by accessing the menu.

A neat world full of exploration with a 3D 'sprite', does not essentially make a great game. Hunter backs up its construction with three different styles of play: action, missions or the main Hunter adventure itself. Action randomly scatters vehicles, buildings and folks around the map with Hunter set loose on a destructive points

hunt. Missions set Hunter one specific task which he must fulfil inside a time limit. The main Hunter game is a developing story that is initiated with the order to bring back 'one general's head'. The main mission is a long contrived trial, with many twists and turns. Leads have to be followed, their locations noted in the log, the correct munitions collected and Hunter kept alive. Enemy uniforms are vital if Hunter is to avoid being shot, although this doesn't help him run the gauntlets of missile launchers in both aircraft and boats. Death is fatal (!) at sea as all of Hunter's possessions are lost. If he croaks on dry land however, then a graveside visit retrieves all he collected.

The success of Hunter is initially dependent on the 3D system, if it didn't stand up then the game would inevitably fail.
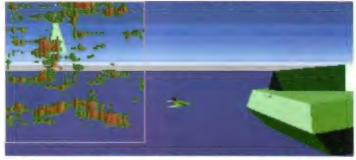
Block wars

Occasionally routes are 'invisibly' blocked, but they are never sealed off. Getting out of vehicles does prove irritating as a wide berth is required so as not to accidentally re-enter it. The advantages of the vehicular movement easily outweigh these slightly longer walks; it's fun leaping from tanks to hovercraft and to choppers. And as a games system, Hunter is strong.

The effectiveness of the Hunter 'engine' means the plot becomes the focus for the player. It's complex, filled with clues all

Ah, it's Mr Reaper from the village! Yes face-to-face with death, and what do you do? He's immune to bullets, bombs and missiles, but surely if you could kill death, then... philosophical answers on a postcard please to Kant's Corner, Hunter Land, by the end of the month.

When faced with a lake and no boat the only way to span the gulf is to swim. It is slow but dangerous as the waters round here are shark infested. The fin-folk creatures swim into you causing collision damage. This attack also sinks injured boats, so beware of Jaws.

pulling in different directions, and Hunters' must prioritise them using hindsight and guesswork. The character interaction is limited because you have no power over what is said. This is neatly by-passed with the introduction of trade to the conversations. Some people only tell you what they know when you have met the right people, in the right order, given them the right object and are wearing the right uniform.

Incoming!

The clues are only part of the story, because getting where you want to go can prove a major problem. Boats are fast and manoeuvrable but prone to off-shore missile attack. Helicopters are dangerous beasts to land and fall victim to anti-aircraft fire when flying low. Laziness can cost a Hunter his life, as walking and swimming is far more secretive than taking the car.

Hunter is very, very, different; supplying a fresh gaming perspective. But the world, for all its curious contents, is small — albeit different for the three styles of game. A brave Hunter can have visited, if not fully surveyed, each island group in a few hours. The puzzles may not have been solved,

Not so much a meeting of minds as a hello to arms. This red trooper however can be bribed to reveal the location of a chopper, using the 'Talk' and 'Give' function. The other way to find transport is by using the ariel reconassiance satellite it shows what is lying around the surrounding area (see inset).

but the surprises are spoiled. *Hunter* is a bold step forward. The graphics are blocky and the animation occasionally dubious, but these are necessary evils in such a 'game engine'. *Hunter* is both a fun exercise in 3D frolics and a chal-lenging adventure game. It does exhibit some rough edges, which hold it back, but the freshness of the approach and the humorous design make *Hunter* a game well worth checking out.
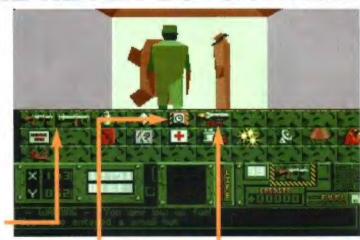
Trenton Webb

GREENS ARE NEVER OUTGUNNED!

Hunter is certainly not a dull wander-about-em-up. You get to shoot people too! *Hunter* is always armed with his trusty gun which curiously, but effectively, fires from the centre of his chest. But, and this is a big but, he gets many more exotic firearms with which to injure himself and others. As many of the action missions only deal with the demolition of different enemy installations, he is forced to use a lot of big-bang material.

Timed explosives — pick them from the menu, drop them with the fire button and run away as fast as possible. They destroy most things except, strangely, washing machines. So next time nuclear holocaust threatens hide yourself away in a Zanussi!

Missiles and Bombs — these little doozies require a vehicle, tank, helicopter or whatever. They are shot or dropped on the enemy, clearing a path for later exploits.

Bazookas and grenades — these are inaccurate, but pokey, and can total buildings with ease. To fire just point the big 'H' in the right direction and let it go.

VERDICT

- ◆ Stunning 3D system is used to create a very original game.
- ◆ Three different styles of play; action, solo tasks or a deep dark adventure.
- ◆ Small 3D world can quickly be explored.
- ◆ 3D occasionally gets glitchy.
- ◆ Fast but tense, blending arcade and adventure modes.
- ◆ Over 15 vehicles to drive and crash.

86%

A captured tank gets serious with a flag-waving red bunker. This is the second shell strike and the buillding is as they say already history. This is an easy way to earn points in the action game which supplies a number of primary targets, but doesn't mind freelance efforts.

Racing around in the helicopter is the easiest way to travel. Getting airbourne is no problem, as is avoiding the flak, however getting the bird back on the ground is tough. Luckily Hunter can also just leap out and use his parachute to float safely back to Earth.

This lad could show John Travolta a thing or two, eh? First he runs one way, then he runs the other (and this is what he does inbetween.) It's a good example of how you can stick two moves together and the animated bit joining them together will be different from any other two.

D o you remember the *Arabian Knights*? The *Banana Splits* used to run the cartoon on Saturday morning telly. All those silk robes and glittering daggers and stuff. Then George Lucas comes along and for fifteen years the closest you get to a flying carpet is the umpteenth repeat of the *Turkish Delight* ad buried inside the umpteenth repeat of *The Empire Strikes Back*. Where's Douglas Fairbanks when you need him, eh?

Swinging sultans

Well, spookily enough, he's probably ended up in *Prince Of Persia* the new arcade adventure from Domark and it's seriously (seriously) funky. Here's some plot...

The Sultan's scooted off to biff up a few squabbling warriors across the border and in his absence the Grand Vizier Jaffar

A very tricky bit from Level Three. You've got to stand on the stone flag marked A in order for the gate to open at the other end (B). Trouble is it starts closing almost as soon as you've done it so you've got to run and jump all the way along, fly off the end, hang off the wall above the spikes and pull yourself up. (Looks like I didn't get there in time, eh, folks?)

has swiped the throne and demanded the royal daughter's hand-in-marriage. If she doesn't agree within the hour she's for the chop-chop. You are her hunk and you're stuck in the dungeons. Somehow news of her predicament reaches you, so off you trot against the clock, up through the palace and into the tower, to save your babe in the bake.

The levels are platform-and-ladders based and you've got to find your way out of each one – dashing along corridors, solving puzzles, all that malarky. Gates need to be opened by stepping on correct floor slabs, chasms need to be jumped – for fear of having a three foot spike rammed up your botty and ceiling tiles need to be tapped just in case they conceal some exciting secret passage-ways. (Actually, it's good to do this to see if any bits of the advancing floor are about to cave in under you.) It's all maddeningly irritating and very, very addictive.

Slicing scimitar

In addition to the bottles that hang around the place waiting for you to drink their elixir potion and rejuvinate yourself, you're also likely to bump into a motley gang of smelly, big-headed swordsmen. Their enthusiasm and skill increase the higher up in the building you get (which means your first job is to find your sword) and from time to time they're not even of mortal flesh and blood – you may well find a skeleton or two jumping up to take a swipe at you! Eek!

The sword-fighting bits are excellent, though you need a degree of skill to beat a beat-em-up, but fencing's so much more gracious, innit? When to strike, when to step forward, how to block your opponent's slice – and nearly every baddy seems slightly harder than the one before so your skills are always improving.

What the really juicy thing is about *Prince Of Persia* is the animation – it's phenomenal. The programmer, Jordon Mechner, spent two years perfecting the movement of his sprites by studying old Hollywood movies like *The Thief Of Bagdhad*, and it shows. The result isn't your usual jerky animation (though the screens do flip instead of scroll) – this is

And here's the princess — the reason you're scuttling all over the shop trying to get from level to level. (This is an animated screen by the way — the big baddy is about to walk on and get a bit stroppy.)

PRINCE OF PERSIA

Broderbund (Domark)

£24.99 ■ Joystick

seriously smooth, for example, if you make your character stop running, as he comes to an abrupt halt his torso will be thrown back. And when you climb onto a ledge you really push your elbows out to pull yourself up. It's as though real live-action footage has been

Ouch! (I thought this was just a warm-up!) You've got to hit this guy three times before he'll drop down dead. (And he's one of the easiest — they get a lot harder to finish off later on.)

processed into the computer and animated over (its reminiscent of those old Persil ads that had loads of faceless figures running about in bright primary colours.)

And not much more can be said than that. It's all rather amazing really. Every now and then a game bounces along and knocks us for six. By any other standard, *Prince Of Persia* would be addictive in the simple design of its

arcade adventure gameplay, but given the additional quality of the presentation it sets itself up as an instant classic. (Cor, eh?)
Andy Ide

VERDICT

◆ Superb arcade sword-fighting action is a perfect tonic to the level-by-level puzzle-solving.

◆ Always slightly more difficult than you'd like it to be, making it very addictive.

◆ Revolutionary graphics make for a game of real character and beautiful atmosphere.

88%

The Witch of Falconwood has some important news. Just one of the many characters Wil encounters in Middlemere, she offers one of those helpful riddles so common in D&D worlds. A straight 'turn left at the next elm' would be appreciated but it never pays to look a gift witch in the mouth.

OBITUS

Psygnosis £34.99 ■ Joystick
keyboard, mouse and T-shirt

The outcome of an encounter (talk, trade or trouble) is made more predictable thanks to the 'Info' icon. It gives the low-down on a person's strength and allegiance.

There's something rotten in the state of Middlemere and Wil Mason – history teacher extraordinare – aims to root it out. Wil has been flung through time by freak weather so he has to find a way home and unite the disparate parts of a mysterious machine, which have been hidden by the four warring lords of Middlemere.

Wil starts from a central tower and he explores this world of forests, mines, castles and rambling roads. At every turn royal guards of the four brothers set upon him as he tries to upset their imperial apple-cart. To make matters worse magic works here and Wil must use it to succeed. Via command icons Wil's response to any situation is up to you, but he must get enough sleep and sustenance if he's going to survive and succeed.

Obit' on the side

Obitus allows three different gaming views of Middlemere. The main

Stuff – the definitive guide

Quiver of Arrows

Wil has a very large bag and an incredibly strong back. This means anything he finds on his travels can be blagged for later use. The more he carries the more knack'ed he gets, so to help decide what's useful and what's edible, in-depth descriptions are only a click away. Quantity is useful when duplicate kit has automatically been stored with your existing supplies. Weight is shown as weight-per-item and total weight. Value is used when trading, as looks can be deceptive. Nutritional value lets you know which munch will benefit Wil most health wise. Mystic alludes to the magical properties of any item.

perspective is in the Dungeon Master or Captive style with Wil negotiating mazes of mines and trees. A sideways view is employed for travel between locations, when Wil switches to arcade-adventure mode. Both styles are combined for his exploration of castles.

All three views exhibit the graphic quality and power that has made Psygnosis famous. The scrolls are smooth, the characters are well animated, while the parallax on the arcade section strongly echoes Beast I.

Where there's a Wil...

Obitus is a game of kit collection and killing. Only by gathering the right stuff, and in the right order can certain foes be beaten and the necessary areas be accessed. The game is big and the plot is constructed to ensure maximum use is made of the three different styles of presentation.

Yet despite its graphic glory, the hugeness of the map and complexity of the plot, Obitus never gets exciting. Paced as an adventure the 'maze' sections never capture the frenetic pace of

View 3, a blend of the interactive adventure mode and the sideways arcade mode. Used mainly for the interior of castles these are some of the trickiest tests of character control.

Dungeon Master or Captive. The arcade sections are easy to survive if not beat, and only the castle exploration really comes alive. Obitus is a strong adventure game that employs a very friendly games system, but only the more pedantic gamers will see Wil back in 1991. **Trenton Webb**

Travelling between locations Wil is seen from the side. Enemies stand directly in his way, hide up trees and cower behind begonias. They must all be killed or avoided.

VERDICT

81%

◆ Huge adventure presented from three different perspectives.
◆ Glorious graphics and good scrolling.
◆ Lacks pace and becomes tedious at times.
◆ The uninspiring plot flags despite brave attempts to inject vitality via the game design.

Those fuel pods would certainly be useful with your fuel supplies flagging, but the Empire has them under a close guard. It's time to get the old laser cannons out and blast that Limpet Gun to smithereens.

Making your way deep inside the caverns of the ice-worlds can be tricky, especially with these piston lifts blocking the way. Some nifty precision flying is needed to get past the barrier to that Time Lock.

ZARATHRUSTA

Hewson ■ £24.99 Joystick or Keyboard

Several years ago, a simple little game called *Thrust* appeared on the 8-bit machines. The basic premise was that you flew a dart-shaped spaceship onto a planet, into a series of cave networks in an attempt to collect and steal a set of pods. Despite its simplicity, *Thrust* was a massively enjoyable game — and it was at a budget price!

Now, after years of waiting, this classic is now available for the Amiga in the form of *Zarathrusta*.

Crash and burn

The plot tells of your struggle as a pilot of the rebellion, on a deadly mission into the empire's territory to steal the much needed Klystron Pods. The rebels' struggle is gaining a certain amount of success, but without the pods to power the star-cruisers their efforts will be wasted.

You must pilot your craft deep into the heart of a number of imperial bases to snatch the pods. To do this, you must carefully navigate your way through treacherous caves and pick up the pod with your tractor beam, before escaping to the carrier which is orbiting the planet.

This would be easy enough, but the empire, naturally, has various defence systems to stop you. Here are a few of the hazards you have to watch out for:

LIMPET GUNS — sit on the cave walls blasting pot shots at you.
JET THRUSTERS — fire a deadly flame out of their ports. Anything in their way will be fried.

AIR VENTS — fire streams of air at you, blowing you off course, invariably into a wall!
ELECTRO-MAGNETIC CORES — pull your ship off course.
RAMRODS — propel themselves at intervals from the walls. Watch you don't get spiked.
LASER PULSERS — fire a beam across the caves. One touch is instant electro-death!
LIMPET DROIDS — bounce around the surface. If they manage to clamp onto you, your ship will become instantly more unwieldy.

Along the route are other items that you need to deal with:
FUEL PODS — use your tractor beam to suck them dry.
TIME LOCKS — once zapped with

a tractor beam, this will act as your restart point when a ship is lost.
CAVERN DWELLERS — tractor them for an extra life.
BARRIERS — use the switch to open them up.
REACTOR — blast it continually to cause a meltdown.

If you can steal the pod and escape, then you are transported to the next planet, where the empire's forces are stepping up the defenses!

Spin and win

It would have been easy to swamp the original's gameplay with all manner of fancy effects and trickery. There has been a lot of work done on producing some nice

colourful graphics and effects, but the same feel has been retained.

The extra enemies and weapons add a certain something to the game, making it a more involving blast, but one of the main points of the original was its budget price. Now five years have passed and charging the full rate for what is, in effect, a revamped budget game seems a little over the top. Still, if you want to have a breath of the days when games were young, cheap and simple, then it does prove enjoyable for an hour or two. *Maff Evans*

VERDICT

- ◆ Nice, colourful graphics are varied to keep you playing for a while.
- ◆ Simple gameplay is easy to pick up and compelling for a while.
- ◆ The extra weapons and enemies add a nice new twist.
- ◆ Somewhat overpriced for a revamped, 8-bit budget game.

71%

The object of your quest — a Klystron Pod. Pull it frr from its mounting with your tractor beam and make your way back to the surface to escape. The heavy pod makes steering rather more difficult, though!
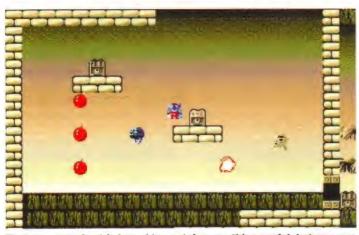
That treasure chest is bound to contain something useful, but can you get it open? The answer to that question will have to wait until Bomb Jack has managed to avoid those nasty little robots.

MIGHTY BOMB JACK

Elite ■ £24.99 Joystick

One of the horizontally-scrolling sections. All those treasure chests and bombs could mean a whole heap of bonus points — but the exit is a long way away and the robots are closing in!

Several years ago, a cutesy little arcade game called *Bomb Jack* was plugging away gaining quite a crowd of admirers. A few years later, Elite released a conversion of the game on the Amiga. Now the latest game in the series has appeared in the form of *Mighty Bomb Jack*.

Have cape will travel

You play Jack, the hero of the game, who is blessed with the mighty ability to leap great distances in a single bound. The idea of the game is to leap around a series of platform-filled levels trying to defuse bombs by simply

Oh no! There's not much room for manoeuvre and that blue robot dropping in from the sky looks like it could mean bad news.

crashing into them. The task is made more difficult by the presence of small scuttling robots which drop in from above occasionally. After walking around the

scenery for a short while, these robots turn into all manner of nasties, from evil birds to deadly floating skulls. One touch of these baddies causes instant death for our little hero.
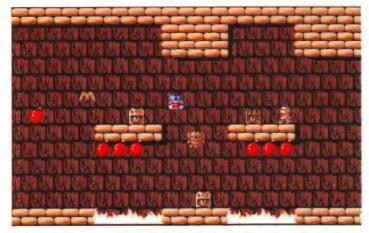
Fortunately, there are a few things that Jack can use to battle the foe. The first is a floating coin which is either hidden in one of the treasure-filled chests or appears bouncing around the screen. If Jack collects this, robots momentarily turn into glowing orbs, which can be picked up for a bonus.

The second weapon is Jack Mighty Weapon. The power for this is increased by collecting tokens from the chest, and when released, it allows Jack to storm through the enemies without a scratch!

Other hazards along the way appear in the shape of some tricky platform puzzles, with Jack needing to find a way of getting past seemingly blocked corridors. But watch out! The robots are gaining!

Boom, Bang-A-Bang!

Tho original Bomb Jack coin-op was great for its time, and is still worth the odd ten pee every now and then. However, no one seems to really have done the game justice on home machines. The first conversion was a disappointing

representation of the arcade game, and, unfortunately, *Mighty Bomb Jack* seems to have progressed very little since then.

There have been a few additions, such as the scrolling levels and the Might Weapon, but much of the game is the same as the original apart from a few aesthetic changes. To begin with, it's great fun leaping about and opening the treasure-chests for extra loot and the odd bits of humour (such as the torture room for greedy players that hog the loot) are quite amusing. However the fact that the game design is rather dated and over-used starts to creep in after a few games and the going begins to get a little dull.

Still, if you're an avid *Bomb Jack* fan, or just like the odd cute little platform game, then *Mighty Bomb Jack* may be worth a game or two. On the other hand, if you like your games to have a fair amount of frantic action, then *Mighty Bomb Jack* is unlikely to hold your interest for long.

Maff Evans

Another problem has been added to the proceedings here. Not only must Bomb Jack disarm the bombs and avoid the robots, one touch of those deadly firepits could be curtains for the caped little hero!

VERDICT

- ◆ Backgrounds are pretty, the animation is colourful but the sprites are tiny!
- ◆ The going is fun for a short while, but the repetitiveness becomes a grind after a while.
- ◆ The design is not different enough from the original to allow it to stand as a full game in its own right.

60%

Would you buy a used car from this man? This was a question once asked about Richard M Nixon and the answer may well have been no. But what if the salesperson is a three fingered green beast with no patience? Well, it's matter of having to, if you want to win Jupiter's Masterdrive, an all shooting, all turbo spectacular set on the big J and its nine moons.

Plot is unimportant, as racing is the heart of the game. Watching from high above the track you have to guide a racer around a twisting, power-up strewn, course. The aim is to finish first, the reason being money. Then, you're able to soup-up the car so it's the meanest maternal motorcar this side of the Martian Grand Prix. *JM* looks like the old coin-op *Hot Rod*, with the car staying central to the screen and the track rolling around it.

Three cars are in the competition, two can be controlled by humans while one always stays under the Amiga's guidance to make sure you don't get cocky. Initially, the cars aren't that quick and victory depends on possession of the racing line and using the forward-firing cannon not speed.

Bus-fare

The winner after three laps gets oodles of cash, second: a fair wad and the third place driver: his bus-fare home. Accumulated credits are spent at the friendly Jupiter Used-Spares Shop where the three fingered fellow lives. Better parts can be bought for both defensive and offensive purposes, in a bid to heighten your chances of victory.

The alternative way to smarten up your speed machine is by grabbing the icons that lie on the road. Cash, repairs, speed boosts, mysterious letters and countless other stuff is there, begging to be run over. And that's about it. The game progresses from three-way race, to bonus section, to race. The vehicles change from dune buggies, to hot rods, to hovercraft, all with their own little foibles. When you trash the car — by repeated collision — or lose too many races then it's game over. Carry on winning and you can go on collecting cash, and beefing-up the motor...

Jupiter's Masterdrive is deceptive. The concept is hardly new. The control's are simple and the power-ups predictable. The graphics are far from inspiring. It should not be anything but average.

Curious craft

Once you've entered into the game however, it starts to bite. The races are bumping, blasting, bashing, battles to the finish. The strange courses are complex, making survival hard, as does the introduction of the curious race craft. You've no time practice with these vehicles, the first time you see them is on the starting grid. All these add tension and the tension lifts the game.

Competitiveness is the secret behind *Masterdrive*. Computer cars screaming past goads you into trying time after time for the title. The cars travel just too fast, when boosted, to be controlled easily and the tracks are unpredictable enough to keep drivers on the edge of their seats. Effectively the sum total of the various parts of the game: design, graphics, sound etc — belie the fun it is to play, making *JM* a pleasant discovery.

Trenton Webb

JUPITER'S MASTERDRIVE

UBI SOFT ■ £24.99 Joystick

Race one and it's all going wrong. Which way is the line?

Ah, they all seem to have left without me! Time to go methinks.

Crashing out in a desert sand storm damages points and pride.

In the bonus round grab the icons (top right) for extra cash awards.

LEAN, MEAN, GREEN MACHINE

Buying spares is a dodgy business especially when the salesman isn't even the same species! The goodies he offers though are enticing for would-be boy-racers. There are two categories of each bit of kit on offer. Obviously the more cash you collect racing, the more you'll have to spend, but nothing compares to the rewards on offer to winners. This means those who start the tournament with a victory are likely to have a strong shout for the whole game, because they can afford higher-grade kit than those who finish last!

VERDICT

- Standard 'over the top' race game that is surprisingly fresh.
- Slow loading between sections.
- Confusing routes make for chaotic fun.
- A whole range of vehicles to smash, bash and crash.
- Shouldn't be that good, but it is!

79%

SP OUTRO

If Page 47 was Screenplay Intro, this must be SP Outro!

63% NARC

TOURNAMENT GOLF

70%

■ **Ocean £24.99**

■ **Elite £24.99**

Nice Amiable Reliable Coppers it don't stand for! Mr Big is the head of an international crime syndicate and the Narc boys are out to get them. Based on the frantic coin-op, this is a two-player horizontally-scrolling blast.

The team scoots around the screen, arresting and shooting Big's boys and dogs, fighting

through level after level of serious violence. The graphics are functional, but not inspirational and the gameplay follows the lines of the coin-op, relying on the number of foes to keep the pace up. It makes for an instantly exciting game, but as with many coin-op conversions, it loses this edge after a few hours continuous play.

Golf is one of the sports that actually suits computer simulation. The trouble is that there have already been countless treatments *Jack Nicklaus*, *Ultimate Golf* — all of which have been very good. *Championship Golf* offers a new control system and very slick presentation in both the graphics and

sound departments. The greens in particular are beautifully illustrated, complete with readable breaks and chattering spectators. For all this gloss, however, it doesn't really have that 'on the fairway' feel. A competent game, it has no flaws but little real magic. As they say in the lager ads it's good, but...

TOTAL RECALL

■ **Ocean £24.99**

77%

Arnie loses his mind and flies to Mars to uncover an interplanetary scam. A multi-style film game — à la *Batman the Movie* — Level One was featured on the January Coverdisk so you should already have a feel for the excellent music. Odd-looking sprites initially spoil the 'realistic' look of the game but are soon forgotten as the toughness sinks in. A mix of puzzle and platform it is high paced, if a tad formula. A solid, polished package, only its late arrival, due to slipping in the schedules, deprived it of a full review.

The Amiga Full Price Chart

1 (-)	**Powermonger**		
	Electronic Arts	£29.99	FG94%
2 (-)	**Teenage Mutant Hero Turtles**		
	Mirrorsoft	£24.99	35%
3 (-)	**Robocop 2**		
	Ocean	£24.95	80%
4 (1)	**F-19 Stealth Fighter**		
	Microprose	£29.99	FG91%
5 (2)	**Lotus Turbo Challenge**		
	Gremlin Graphics	£24.99	89%
6 (-)	**Toyota Celica Rally**		
	Gremlin Graphics	£24.99	70%
7 (-)	**SCI**		
	Ocean	£24.95	76%
8 (6)	**Hollywood Collection**		
	Ocean	£24.99	Compilation
9 (8)	**Indianapolis 500**		
	Electronic Arts	£24.99	FG92%
10 (-)	**Narc**		
	Ocean	£24.99	63%
11 (5)	**Power Pack**		
	Beau Jolly	£24.99	Compilation
12 (-)	**Elvira**		
	Accolade	£24.99	61%
13 (3)	**Kick Off 2**		
	Anco	£24.99	FG94%
14 (10)	**Golden Axe**		
	Virgin	£24.99	80%
15 (-)	**Total Recall**		
	Ocean	£24.99	77%
16 (7)	**Wheels of Fire**		
	Domark	£??.??	Compilation
17 (9)	**Gremlins 2**		
	Elite	£24.99	79%
18 (4)	**Supremacy**		
	Virgin	£24.99	FG90%
19 (15)	**Awesome**		
	Psygnosis	£34.99	63%
20 (14)	**Captive**		
	Mindscape	£24.99	FG91%
21 (11)	**M1 Tank Platoon**		
	Microprose	£24.99	71%
22 (-)	**Strider II**		
	US Gold	£24.99	77%
23 (21)	**Monty Python**		
	Virgin	£24.99	88%
24 (16)	**Super Off Road**		
	Virgin	£24.99	80%
25 (28)	**F-29 Retaliator**		
	Ocean	£24.99	FG92%
26 (-)	**Turrican**		
	Rainbow Arts	£19.99	88%
27 (25)	**Midnight Resistance**		
	Ocean	£24.99	69%
28 (-)	**Pang**		
	Ocean	£24.99	87%
29 (29)	**St Dragon**		
	Storm	£24.99	82%
30 (19)	**International Soccer Challenge**		
	Micro Style	£24.99	55%

Chart compiled by Gallup Ltd © 1991 European Software Publishers Association.

Budget Top Ten

1	**Fantasy World Dizzy**	
	Code Masters	£6.99
2	**Treasure Island Dizzy**	
	Code Masters	£6.99
3	**Advanced Fruit Machine Simulator**	
	Code Masters	£6.99
4	**Afterburner**	
	Hit Squad	£7.99
5	**Silkworm**	
	Mastertronic	£6.99
6	**Fast Food**	
	Code Masters	£6.99
7	**Hitchhikers Guide**	
	Mastertronic	£9.99
8	**Batman — Caped Crusader**	
	Hit Squad	£6.99
9	**Yogi's Great Escape**	
	HiTec Software	£7.99
10	**Last Ninja 2**	
	Hit Squad	£7.99

FACT

The average score for software in the chart this month is an intriguing 75% — ignoring compilations. What does this tell you? Are we getting it right, recommending the games that people really do want to buy? Is poor software suffering at the shops? Are games getting better or worse? Were we too harsh on *Turtles* or too generous to *Powermonger*? Can we count? Let us know, write now!

NEW ENTRIES

Busy or what? It's the first full chart since Christmas and all of a sudden King *Kick Off* falls to 13. Three new entries are at it hammer and tongs for the top spot: *Turtles*, *Powermonger* and *Robocop*. They lead the pack of 11 fresh faces and re-entries this month.

BUDGET

Clearly, people don't mind paying £30 for good stuff. In the All Price Software Chart for the Amiga *Powermonger*, *Turtles* and *Robocop 2* all managed to outsell *Fantasy World Dizzy*, which costs a mere £6.99. Second best budget was *Treasure Island Dizzy* which was burnt off by *SCI*, while the bronze budget medal went to *Advanced Fruit Machine Sim*, which was sandwiched between *Elvira* and *Kick Off 2*.

STAYERS

How long can they keep it up? (Oo-er! etc.) Two games have now spent an amazing six months in the Amiga software chart. Both *F-29* and *Kick Off II* — what will there be to write about when it finally slips? — have been in the software chart since Issue 15.

SPout'ing Out

Games Editor, Trenton Webb, has his say.

Games are often attacked on the grounds they tactlessly 'glorify destruction', but one genre may now suffer such an attack again — military simulators. Their appeal is that they give the player the chance to experiment the latest high-tech kit for £25 not $5.6 million. Yet, the same weaponry is now being used for real and a question of taste arises.

MiG 29s, F-15s, Abrams M1s and Stealth Fighters are all the 'stars' of recent sims or of projects in the final stages of development. These games do, have a defence — and not just ECMs, chaff and flares.

These games were planned and designed long before the current war. Their release dates illustrate bad luck, not marketing exploitation. These games inform players about these machines and their weapons systems, helping them to determine fact from fiction. Sim players need not rely on patchy MoD explanations of HUD systems or how a HARM missile works, they know. Sims help gamers appreciate the fragility of their craft and intelligent players realise that there's no 'Load new pilot' option in real life.

But designers must restrain any jingoistic tendencies. Another Assault on Port Stanley (Amsoft/Shirekilo) could not be tolerated; a 'Saddam-busting' mission would be in poor taste.

MICROSMART

GAME Busters

Back to the Future II (Part 2)

A lot of you have written in to point out the fact that we didn't print all of the cheat. After typing in: THE ONLY NEAT THING TO DO, you can then sneakily skip levels by pressing Shift and Z.

I don't know, some people. It's only a little bit of the cheat (mumble, moan).

Horror Zombies from the Crypt

One reader was pretty quick off the mark sending this tip in! If you're having trouble beating this game, then try this cheat:

Get onto the first level and type "M COMMA AND A DOT" or "M,." and you will be blessed with infinite lives. This should put you on a more even footing with those undead little beasties!

Christopher J Thorncroft, Hastings, East Sussex

If you have been given this copy of Amiga Format as a Valentine's Day pressie, then your loved one obviously has good taste. If, on the other hand, you have had to fork out the dosh for yourself don't worry too much! Just sit back with **MAFF EVANS** and enjoy some successful gaming with the help of his devastating fleet of **GAMEBUSTERS.**

Battle Command

Nice thought, isn't it? Driving around in a powerful tank, blasting the enemy and generally protecting the innocent from the vicious dictators. This is what you can do in *Battle Command*, but that's only good news if you've mastered it yet!

Here are some helpful guides to some of the missions to help you get the most out of your trusty tank.

Airfield Attack

Make sure you destroy all the buildings near the runways and any others in the vicinity. For this reason you need to make sure that you're stocked up on IR surface-to-air missiles.

Hideout

The only way to complete this mission is by using mortars — it's a good idea to take two sets of mortars with you.

When you reach the circle of mountains use the exterior views at maximum distance to find the exact location of the target then use the mortars, set at around 500-700 yards, to blast it.

Destruction

Try to avoid the crossroads where possible, as there are always gun emplacements based at them.

If you are short of ammo and still have lots of buildings to destroy, sit next to them and wait for the enemy to fire on your position, then move out of the way. Their shots should do the task well!

Missile Battery

This is pretty straight forward so keep your head and push on!

Satellite

To begin with, head south-west across the bridge then follow your scanner. If your rear-end starts to get badly damaged (ooer, know what I mean), driving around backwards can help to balance it out, as well as giving you the chance of blasting any enemies that try to follow you.

When you reach the satellite, remember to drive into it slowly.

Kamikaze

Forget about the roads and travel south-east until you come to where the river and mountains nearly meet instead. Now whiz through the gap to the pick-up

point to escape like Ken Dodd from the tax-man.

Remember to take plenty of air-to-air weapons and self-protection systems.

U-Bomb

One clue to this mission is to note that the fence at the entrance of the valley works by electricity – and the electricity pylons are on the other side of the river.

Try to blow up the U-bomb with Dragonflies for some spectacular results!

General Hints

When the chopper arrives at the pick-up point try to destroy all the enemies in the area; there's nothing worse than getting blown-up as you board the chopper!

When using the pulverisor cannon set your binoculars at maximum magnification for greater accuracy.

Use trees and buildings for cover if you're being pursued.

Destroy enemy aircraft as soon as possible to strengthen your position and note that you can also use surface-to-air missiles to blast ground targets.

One last thing – keep moving!

Jason Kennedy, Coleraine County Londonderry

Hostage Rescue

Follow the route shown on the map (below) to the rescue area and blast the building on the bottom left as you go in to reveal the hostage. Drive up to him very slowly to pick him up and then run like blazes to the pick-up point!

····· ROUTE TO FOLLOW

JAMES POND
– UNDERWATER AGENT
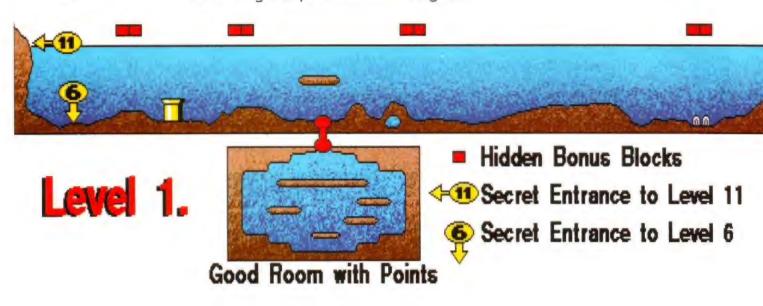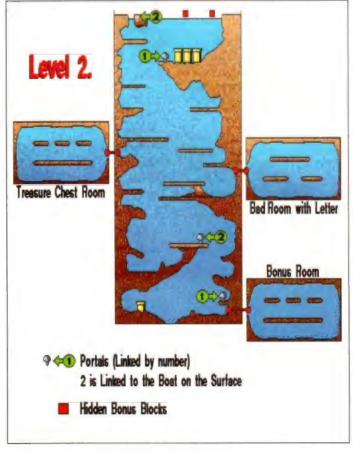
HIDDEN BONUS POINT BLOCKS

Some missions contain invisible blocks hovering above the surface of the water. James can reveal them by head-butting them. Once found, a red brick will appear and a bonus item will pop out of the top and fall to the bottom of the sea. The brick can then be used as a normal platform.

The treachery of the underwater world can be quite hazardous to the health of a little fish — even a special-agent fish! For those of you having trouble coping with the dangers of this sub-aquatic adventure, here are some extensive tips and maps of the first seven levels, direct from the programmers, to help you on the way to becoming a super-underwater agent.

Level 1.

- ■ Hidden Bonus Blocks
- ←⑪ Secret Entrance to Level 11
- ↓⑥ Secret Entrance to Level 6

Good Room with Points

Level 2.

Treasure Chest Room

Bad Room with Letter

Bonus Room

♀←① Portals (Linked by number)
2 is Linked to the Boat on the Surface

■ Hidden Bonus Blocks

SPECIAL SCORES

At various points through the game there are special items, some of which are hidden, but they can dramatically bump up your score.

SUPER BONUS ITEMS

These are pieces of treasure which give hefty bonuses:

THE GOLDEN COIN — 5,000 points.

THE GOLDEN TROPHY — 10,000 points

THE GOLDEN CHEST — 20,000 points

HIDDEN BONUS LIFE BLOCKS

These will act much the same as Hidden Score Blocks, with the exception that they reveal a heart. This gives you an extra life when they are collected.

Bonus Room

Level 3.

Bonus Room

■■■ Sunglasses show Invisible Monsters

♥ Extra Life

🦪 Oyster (Protection)

←② Portals (Linked by number)

HIDDEN SUPER MEGA BONUSES

These are totally invisible and usually well hidden. If James picks one up then he receives a 500,000 point bonus.

HIDDEN COMPLETED MISSION WARPS

Once you have completed a mission, invisible secret warps become activated. Moving onto one of these secret warps will cause James to be transported to an advanced mission. However, these missions can't be completed unless James has certain special gadgetry. To get to see

receives 50 points for collecting each one of them, but if he manages to collect them all to spell JAMES POND and returns home to find the letters glowing, then he receives a colossal 10,000,000 points. This can be done up to three times for a massive 30,000,000!

MUSHROOM PORTALS

Mushrooms act as teleports, transporting you to another place in the section. All James has to do to use a portal is to swim onto it, except of course for those out of the water. To use these, he must push up while hopping on one.

Baddy Room with Letter

the mermaids, James must find the warp to Mission 11. This can be found by jumping up and down on the block to the far left of the mission at the same level as the sea. But try and look out for the Mad Scientists!

EXTRA LIVES

Extra Lives are gained every 100,000 points until you reach 500,000. From this point they are awarded every half-a-million until 30,500,000.

SECRET ROOMS

There are sometimes holes in the seabed, which when entered give access to secret rooms. There are three types of these:

BAD ROOMS

Contains monsters and a bonus letter (see Collecting Letters).

GOOD ROOMS

These contain a whole host of bonus items along with starfish for extra energy. Bonus rooms in later levels may contain super-bonus items such as Whisky bottles — but James will have to get really rather drunk before he can get the bonus.

NEUTRAL ROOMS — Contain treasure chests which can contain good and bad items.

COLLECTING LETTERS

All of the bad rooms have a letter at their centre. James

There are two types of mushroom — those which transport James to another mushroom and those which transport to the location where a mission object was successfully dropped.

WALLS

There are special sections of walls with different effects.

SWITCHED WALLS — Most switched walls have a twin. When one wall is switched off, another one will appear somewhere else in the section.

ALTERNATING WALLS — These are similar to switched walls, except that they toggle at regular-timed intervals.

DISAPPEARING WALLS — These are only found above water and vanish when James jumps on them. Watch out for anything nasty under platforms — this usually signifies a trap!

APPEARING WALLS — These walls too are only found above water and appear when they are walked upon.

UNDERWATER CREATURES

Not all the creatures James comes across are deadly – some may be helpful. Here is a guide to some of the most common creatures in JP.

OYSTERS — When touched, oysters will follow James around the section killing up to eight enemies.

EXTRA ENERGY GRUBS — These bounce up and down. More energy will be gained if a grub is caught as it bounces upwards.

PELICANS – These can be found on missions two and five, crossing the pelican crossing! If James stays rather too close to the

Level 4.

Bonus Room   **Monster Room**

◀① Portals (Linked by number)

$ 500,000 Point Bonus

Level 5.

◀① Portals (Linked by Number)

● Bomb

🔫 Ray Gun

✺ Wand

$ 500,000 Point Bonus

▰▰▰ False Platform

Bonus Room

Treasure Room

Level 6.

🌺 Poisonous Flower

Airlock

②➜ Portal

▭▭ Platform to Trap

▭▭ False Platform

Bonus Room

Monster Room

🪄 Wand

▭▭ Hidden Score Blocks

▭▭ Extra Life Blocks

◄①➜ Portals
(Linked by Number)

Bonus Room

Level 7.

SHADES — These allow you to see the usually invisible jellyfish.

TOP HAT — Reduces the damage you take from enemies.

RAY GUN — Firstly, when underwater it saves you having to bubble-up enemies and pop them because they pop instantly when hit. Secondly, it allows you to kill land-based animals.

EXTRA DYNAMITE — This can be obtained from James' home pipe. It is only for use in mission three, where he can get extra bonus for planting it at the bottom of the legs of the oil platform.

PASSWORDS
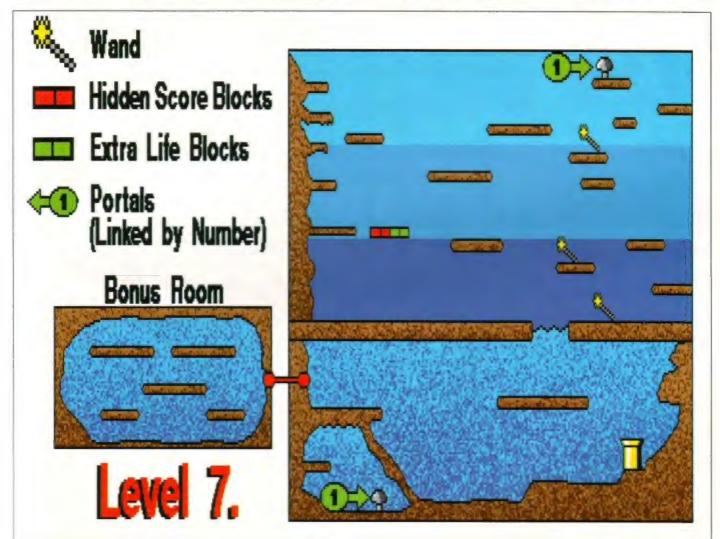
Right, for all those impatient people who want to cheat, then try this:

Type in JUNKYARD and hit Return while playing the game. You can now use the following keys:

RETURN — Toggles the cheat on and off. This gives you a protective floating fairy.

D — makes the locks disappear off the next mission pipes.

Continued overleaf ▶

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surface as they pass, they will swoop down and try to grab him out of the water.

JELLYFISH — These are found on missions four, six and ten. They can only be seen with the special X-ray sunglasses.

PUFFA FISH — These appear while you are on mission five and they try to run off with the toxic

waste to stop James from dropping them on land.

SQUID — These appear in missions three and eleven. If James comes into contact with them, everything will black out for a few seconds.

MAD SCIENTISTS — These teleport out of thin air to wherever you were a few seconds ago, so

keep on the move. Luckily, they only appear on missions eleven and twelve.

EXPLODING RUBBER DUCKS — There are four of these in mission six. If James touches them they explode and kill him.

SPECIAL HARDWARE

HELMET — Allows you to breathe above water for longer periods .

OOOPS-UP!

An incredible amount of letters have come in listing all the level codes for this Pang-style game, so without further ado, here's that list in full!

One thing to note is that you have to be careful when entering the letter O and the number zero. Mistakes are easily made, since they look very similar, so try again if you make a mistake — DON'T write to me straight away saying I've got it wrong!

No single credit for these codes, as a vast number of you sent them in, but thanks anyway.

1 – Po01	26 – FE5C	51 – FoR0	76 – RT27
2 – DK51	27 – CXE5	52 – 2FF7	77 – TUP8
3 – 30F7	28 – 32H4	53 – R4KG	78 – KoP9
4 – FL59	29 – PD30	54 – 39GH	79 – BIWl
5 – Q058	30 – 10F4	55 – PW04	80 – EB01
6 – FA20	31 – D947	56 – oEP5	81 – SA3A
7 – 5F6J	32 – FD4G	57 – R4G6	82 – S4A9
8 – CKD4	33 – DK48	58 – MF03	83 – LA8D
9 – NF05	34 – 206G	59 – oW75	84 – MUE0
10 – D04G	35 – DK39	60 – MC90	85 – ER7E
11 – 40V8	36 – DGLo	61 – 0oT8	86 – NEPT
12 – FDLO	37 – D049	62 – TI27	87 – W8GA
13 – V03D	38 – 6P05	63 – W3RE	88 – PI31
14 – 49F8	39 – Fo49	64 – 9o5W	89 – 2II0
15 – WAQD	40 – 4G7H	65 – TRP2	90 – A234
16 – X038	41 – XPE5	66 – 6GI3	91 – X3Q1
17 – UU09	42 – UP9F	67 – REW8	92 – NEC1
18 – 40FJ	43 – AQIQ	68 – IPoU	93 – GUF7
19 – X03C	44 – S046	69 – HGF6	94 – A3K9
20 – DK49	45 – VE96	70 – FUK0	95 – C5J0
21 – G8LD	46 – X94B	71 – 30RT	96 – JH90
22 – P49X	47 – E114	72 – JUEE	97 – JUBI
23 – A0A5	48 – D824	73 – MIRo	98 – V069
24 – 39VS	49 – 84D5	74 – GULU	99 – T800
25 – XPE4	50 – S04L	75 – JUG8	100 – 4799

Lemmings

Cover Demo

Just a quick note, seeing as the demo of this surprising little game has proved to be so popular, to inform you of the codes to access the three levels.

Level 1 – DGHPVMXHIY
Level 2 – OHPVMXDIIR
Level 3 – LPVMXDGJIO

Simple eh? Yeah! 'Nuff said...

Paul Mansbridge,
Saltburn, Cleveland

Awesome

If you're having trouble surviving the battles of this slightly disappointing space-trading game, then try this little cheat:

Wait until the cargo/energy level screen appears, move the cursor to the top left-hand corner with the joystick, then press fire and + on the keypad simultaneously. The screen should flash and you will be furnished with infinite shields and lives.

If you're still bamboozled by the trading sections, then here is a way of easily getting to the end of the game. Simply go to the outer-most planet and you will be presented with another animation in the same style as the intro.

Anjum Khan,
Ilford, Essex

Kick Off

Isn't it funny how some of the most simple ideas pass you by? Take this tip for Kick Off for instance. The main problem with trying to save penalties is not knowing which way the striker is going to kick the ball. With a little bit of practice this tip could be very useful...

Before the attacker takes the penalty, push up on your joystick. A split second after he takes the shot, hit P to pause the game. You should now be able to see which way the ball is heading and act accordingly by pushing the joystick in the direction of the shot when unpausing the game. The keeper should now dive to either save the ball or at least knock it clear. Getting the split-second timing right on the pause and joystick direction may be a little tricky, so keep practising!

Andrew
Southampton

Z-Out

This excellent shoot-em-up is most definitely aimed at the more experienced blast-addict. Those of you who aren't as adept at firing the old lasers may be in need of a hint. Well try holding the J key and pressing one to eight on the keyboard to jump to whichever level you wish. If that's not enough then try pressing J and K together for infinite lives. This should allow even the lamest space warriors to enjoy all those pretty graphics for themselves. If you want to return to full-action dangerous blasting without the cheat, then simply hold down J and K again to turn it off.

In-D (!)
Stoke on Trent,
Staffordshire

Gremlins 2

Everyone knows how much of a pest those little green ba... I mean creatures... can be, so here is something to help all you frustrated vermin-exterminators out.

Start a game and do as well as you can before dying. Well enough to get onto the score table at any rate. Now, instead of letting your ego take over and putting your name up in lights, enter your name as SINATRA. The game will now be so impressed that it is being played by such a superstar that it will grant you with infinite lives!

Colin Patterson
Union Mills,
Isle of Man

Following up...

What? Five pages full to the brim with tips just not enough for you? Well then you'll have to flick through to page 101 and find there you'll find a mail order add for a marvellous book that contains over 160 pages of tips, maps and mini reviews of over 100 games! What more could a game player want?

THE INDISPENSABLE GUIDE TO GAMES ON THE AMIGA

SCREEN PLAY

– THE BOOK

It's a Funny Old Game

Anyone who has ever played a football game must have experienced the conviction that at some vital moment he has lost control, or that he definitely didn't shoot, pass, or change direction in the way the player on the screen showed. Many people develop a paranoid conviction that they have control wrested from them by some frustrating whim of the program. This article may help to dispel the frustration these players feel, because the sad truth is, that's exactly what's happening!

What's it All About?
This revelation came to light when I was endeavouring to dissassemble the coding of a popular football game, so as to secretly change the players' characteristics. I stumbled on a previously unknown set of player parameter codes, of a much more complex nature than the usual strengths in tackle, dribble, shot, stamina and the like. These player codes, if introduced into a player's team, show some consistent and disturbing characteristics.

Two Halves...
I realised that these 'exotics' (for I found more than one) were randomly inserted into a player's team so as to bring more chance and character to the game. I was excited to find that virtually all football games use *the very same* 'exotic' players!

At first I couldn't understand this, but now I think I have the answer. Does anyone remember the first semi-successful 'total animation' football game, *Blokins World Soccer 80?* The movement and responsive animation of this was the direct precursor of modern football sims, but never a huge hit – perhaps because many players found that the teams seemed to have a life of their own, only loosely controlled by the joystick...

...Ninety Minutes...
There were other drawbacks in this game, but all of the teams had at least two of these exotics who were only partially controllable at the best. The notorious Slough Academicals were actually all exotics, and anyone in charge of this team would often spend the whole game screaming at the top of his voice at the screen because the little players were about as controllable as a busload of rugby players in a brothel.

...At the End of the Day
I now believe that either knowingly or inadvertently the software developers of later games like *Kick Off* 'reverse engineered' the great smooth animation of *BWS '80* and inadvertantly ported across the randomly-assigned exotics from this cult hit along with the smooth vector interception and trigonometric 'acceleration probability' animation algorithms. It was in this code that the exotics' own control coding was neatly and cunningly embedded...

What to Look for...
For the first time, the truth about the infamous Slough Academicals can be revealed. I'll use the original names, based on players of the time, and I've spent many an amused moment putting faces to these pseudonyms. The letters D (defender), M (midfielder), F (forward) or A (plays anywhere) will help you to find them in your own favourite footballing title.

HARRY HOOFER The famous Slough Academicals left back, who unfortunately could never make a tackle without kicking the ball into touch.

Chris Woggle F – only found within 10 yards of sideline, joystick direction to cut inside causes 1/4 speed. If crosses into penalty area causes all team mates to be relocated within ten yards of half-way line.

Ron McButterflinger Goalie – very common – runs towards corner flag as soon as ball in sight. if ball shot directly at him makes spectacular dive away from it. Takes 3 seconds to get up from silly dives. Always punches every save out with 70% chance it's to feet of present controlled opposition forward.

Sid Crashtackle D – always slides into tackle and 20 yards past. Always connects with ball but never comes out of tackle with it.

Ever played a football game and been bemused by the way your players seem to take on a life of their own? **EWART JONES** investigated Blokins' World Soccer '80, an old classic, and was disturbed by what he found...

Paul Gazzle M – excellent dribbler, pinpoint passer, until first tackled and robbed of ball – then 30% chance runs around uncontrollably fouling everyone for rest of game. 69% sulks on sidelines and immediately passes every ball received to nearest opposition player. 1% chance scores magnificent goal.

John Nutter D or F – heads everything, even penalties! Ball to feet is lost to nearest opposition player.

Manuel Maradiva F – crashes to ground whenever any opposition player gets within 10 yds, doesn't even require ball to dive in penalty area. 20% chance of getting free kick, 40% of penalty. If your player appears to roll 15 yds after seeing an opposition player, you have Manuel.

Harry Hoofer D – when makes successful tackle builds up such kinetic energy that he always lashes ball in same direction out of play.

Sammy O'Delayny A – when you fire, shoot or pass, he waits between .5 and 1.2 seconds before he releases ball.

Nobby 'Mantrap' Fowler M or D – quite a useful exotic: nothing passes his area of screen, 95% successful in tackles. Often sent off for tackling ref or linesman. If you swear one of your own players stole the ball off you, Nobby's in your team. Tip: keep him away from the penalty box as he will rabidly tackle own goalie if he has ball. Also small flaw: can't score for you as his shot is weak and wayward.
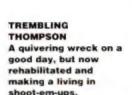
Butch Sideways M or F – when button pressed/released to shoot or pass, swivels sideways-on to opposition goal before releasing ball.

Kevin Perfect F – brilliant at everything, but only useable once in game and invariably scores even if you are rubbish. Drives most players crazy after this as he appears to disapear. Code analysis shows he actually transmogrifies into Clive Misfit (see below) after his goal.

Clive Misfit A – most common exotic, found in ALL footy games researched to date. 40% chance he's smuggled into even the top teams in at least one position. Just as you are about to tackle, shrugs off joystick control and races off screen. 30% chance of .5 second delay before responds to any joystick control. When dribbling changes direction so fast he loses ball.

MANUEL MARADIVA
Often called the "Left leg of God", he was never noted for his playing so much as his acting. Now appearing in panto.

TREMBLING THOMPSON
A quivering wreck on a good day, but now rehabilitated and making a living in shoot-em-ups.

FRAZIER McDONUT
Used to tie knots in lamp-posts for fun.

BRIAN BREAKALEG

Shots always die to a halt in 6 yd box. Sprints as though 40 stones and collecting pension in 5ft of porridge. Tackles player 10 yds behind ball player. Plays ball straight up into air if in own penalty area then runs about

like chicken with no head as it starts to descend (joystick controls are randomly reverse-switched until ball lands).

Brian Breakaleg M or F – unluckiest player. 50% chance of surviving any match. Fully fit for selection only 15% of time. Worth keeping as you only have to point him at goal and he will break every tackle (and often a limb) until he finds himself and ball over goal line. Also subtly recognisable by his 'Quasimodo' gait as head becomes dislocated after 13th tackle. Tip: DON'T assign him captaincy: he may increase morale, but has 10% chance of dislocating shoulder on shaking hands with referee and 20% chance of breaking wrist when flipping coin.

Trevor Fancylegs F – an excellent dribbler but very slow, so usually dribbles past everyone twice. 50% chance gives ball to nearest opposition player when penalty area finally comes onto screen.

Alan Frenetic M – covers every pixel on screen during match (this is actually his only program control). Appears as slightly smaller sprite who rushes onto screen regularly and weaves about busily. By the time you get control he's leaving the screen.

John Burns F – Brilliant and consistently excellent forward until gets to crunch matches: but if he is in a team that reaches the FA Cup final, European Cup or any match in the World Cup Finals he then appears to take over all the playing characteristics of Big John Vegetable (below) and never leaves own half voluntarily at any stage.

Big John Vegetable D and liability – In BWS '84 was at centre of the notorious defence of Slough Academicals, and was also centre half for San Merino in World Cup. Once led league scoring list with own goals for first 3 months of season. 20% chance impedes/tackles own goalie. 15% of own goal. 10% passes to nearest opposition forward. 15% gives away penalty. Has one minor saving grace/blackmail factor: if left out of team morale plunges to zero, and players revolt and refuse to play. In Slough Academicals' case I found this improved goal difference: the league would award the match to the opposition, but the 12-0 beating wasn't added to the statistics.

**Postscript:
Where are they Now?**
BWS 80 had a few more exotics who were either too well known to survive, or would be so obvious as to be removed or suppressed at the earliest debugging stage. The more notorious of these include Geordie Blessed, whose incredible dribbling skills were strangely enhanced for the non-partisan watcher after the half time break, during which he obviously didn't imbibe orange juice.

His convoluted wobbly dribbles after the interval caused havoc and alarm for both sides, especially as he ignored all orders to release the ball and eventually shot at random. He was certainly a player of two halves; I suspect they were both neat whisky.

Another sadly missed exotic was Fraser McDonut whose idea of subtlety was to not attack the nearest opposition player. Wombleton Arsenals had five players masquerading as Fraser, which explains the usual result of 'match abandoned due to mass riot, all points void. 23 sent off, managers claim provocation.'

My favourite sprite of all time was the incredible character of Barney Brown, the ageing player/manager of Slough Academicals. The humour and pathos of this character cannot be surpassed. To watch his bent little figure making its way to the centre spot, there to hand over his zimmer to the departing linesman, and straighten up manfully to receive another 90 minutes of humiliation always caught in my throat. And the way his wig, false teeth and sometimes even boot would fly off as he unleashed his famous wayward blockbusters, always cheered me up.

The only player I know who got a job in modern software was Trembling Thompson, the apprentice reserve, who was so afraid of the opposition that he would freeze and cower into a foetal position whenever an opponent came onto the same screen. He now pilots a heavily-armed water skimmer and terrorises small frogs in Typhoon Thompson...

Externally similar to its predecessor, but inside the Action Replay II boasts a whole host of refinements, from improved screen grabbing and sound manipulation tools to an extremely useful preference screen.

cartridge is the same, with a solid, top-mounted freeze button and a variable 'slow-motion' device which can be switched out when it isn't needed. The real changes though, are with the cartridge's built-in utility programs.

Revenge of son of cartridge

So how does the new version improve over the original? Well, to start with, the aesthetic qualities of the boot-up and main screen have been improved, which makes everything clearer and easier to operate. The addition of very extensive help screens on the

The long awaited, updated version of Datel's successful utility device is now available. **MAFF EVANS** checks out how it compares to the original.

Action Replay II

Utility Cartridge ■ A500: £59.99 A2000: £69.99 ■ Datel 0782 744707

Freezer cartridges have always been surrounded with a somewhat dubious aura. Many see them as the tools of the cracker, with visions of pirates across the land breaking their way into programs' protection. But now we have these wonderful 16-bit machines, with more powerful sound, graphics and program power, the need for some kind of hardware tool has been greatly increased.

If I had a hammer...

Breaking into programs to hack their sound and graphics may seem a dubious pastime, but a tool that allows

you to save out sound effects and screendumps comes in extremely useful. For one thing, we at *Amiga Format* wouldn't be able to bring you those lovely looking game reviews with all those excellent screen shots. And what about all those Amiga musicians who hear a demo and think to themselves 'That drum sample's nice...I could use that!' Now all they have to do is hit a button and it's theirs for the taking.

Datel have already come up with a powerful utility cartridge in the shape of the original Amiga Action Replay (reviewed back in Issue 12) and the basic form of the new

graphics, sound and monitor fronts are much appreciated, making it easy to see just what you are doing. The manual takes you through, step by step, the simpler things, leaving the complex data for the experienced programmer to work out.

What might have been useful would be the ability to save sprite data as IFF information, allowing you to load them into art packages.

On the whole, though, the new version has been tidied up and expanded to allow even the novice to get the most out of the system. This is an improved version of a very good cartridge.

Action Replay's tools are split into five sections:

FREEZER
The freezer allows a program to be halted in its tracks and dumped out to disk. When next loaded, the program will restart at the position it was saved. This could be useful for playing long, involved games without a save game feature.

MONITOR
This is for the serious propeller heads only! It allows you to read through and alter chunks of data, in effect reprogramming the original code. Once you have made the necessary changes you can save the file out for future use.

SOUND
One awkward sections of the previous version of the cartridge was the difficulty in grabbing sounds. The cartridge just grabbed the sample that was playing at the time the button was pressed, leaving the user occasionally frustrated.

The new version has adopted a system with a single waveform showing all the machine's memory. You can shift the pointers to locate a sample and simply save it out to disk.

GRAPHICS
One of the most powerful utilities of the Action Replay II is its graphics handler. If you want to pull a screen from a demo or a game, or even pull a frame from a slide-show without having to decrunch the packed data, then simply hit the freeze button when the required screen appears. You can then enter a number of screen banks via a complex and powerful editor, which allows you to carry out a whole host of manipulations on the picture and save it out as a standard IFF file to load into virtually any art package.

The power of this section is pretty impressive, with the ability to resize the screen, operate with dual playfields and HAM screens, unlock and shift bitplanes, alter the colours, darken or brighten a screen and much more.

DISK MONITOR
This is similar to the basic monitor, except it is possible to alter data directly on the disk via the cartridge. This enables you to set up boot disks, security code programs and also correct any faulty disks you may wish to resurrect.

VERDICT

PURPOSE
A hardware 'toolkit' to allow the user to modify and extract data from programs.

SPEED: EXCELLENT
All the commands operate instantaneously, with disk operations working at a pretty good rate.

DOCUMENTATION: AVERAGE
Initially good, with clear instructions for the main commands, but could leave the novice bewildered at times.

ACCESSIBILITY: GOOD
All the options are clearly and simply laid out, but unless you know what you're doing some sections could leave you feeling lost.

VALUE: GOOD
Not too cheap at around sixty quid, but it is a good example of the type.

FEATURES: EXCELLENT
Contains all the tools you could wish for when hacking around with disks and data. Some tools may even render the Workbench redundant for many people!

I n the whole world of Amiga applications, no two companies have been so at war with each other as Gold Disk and Soft Logik. Adverts for their flagship Desktop Publishing packages, *Professional Page* and *Pagestream*, have followed similar lines and made claim and counter-claim throughout many revisions.

Both should now have reached the peak of their powers. As a fitting test, we decided to put them up against the Mac DTP program *Amiga Format* uses: so we took a page from last month's issue, the *ESWAT* review on Page 70, and did a version of it in both packages, trying to get as close as possible to the original.

RIGHT: The top of the page at 100% view. The headline font looks a little odd, the imported IFF pictures are shown as black-and-white only and there is no colour representation on the text or keylines.

ESWAT

USGOLD £24.99 ● Joystick

The two big boys of the Amiga DTP market both release new, updated versions of their top-end packages this month. **PHIL SOUTH** puts them to the test.

Pagestream 2

Four-colour PostScript DTP ■ Soft-Logik ■ Price/details not confirmed

Free Stream
Whereas *Professional Page* is very formalised, *Pagestream* is very free-form. Everything on the page is an object and graphics can be subjected to the same transforms as text. You can click the mouse anywhere on the page and start typing, and once typed the text can be sized to any stretched or squashed aspect ratio.

Overall text handling in *Pagestream* is very good, with control over indenting and outdenting paragraphs being very simple. But the text editing facilities are appalling, and any changes you make are painfully slow. *ProPage*'s built-in text editor makes this 'editing in the document' lark look a bit silly.

One nice thing on the editing front – which *ProPage* doesn't have – is an undo feature. If you type or cut or format something and it all goes up the spout, you can bring it back just by invoking the undo command. But there are certain things that this doesn't work on.

And finally on the text front we have the text scaling, which using the mouse you can bend and stretch to any size and shape you want. This is enormously flexible, and the only way I could find to do this

Silver Screen
The screen display is Interlace only, I'm afraid, so anyone without a flicker fixer is in for a headache. And it's black and white only, no grey scaled IFF files, no colour graphics, just stark, flickery soot and whitewash. You can change the screen colours to

BELOW: And here we are down at the bottom of our A4 page. Note that the tinted panel for the Verdict box gives absolutely no evidence of being a solid block of colour. The system used to scroll around the page is a drag bar, more familiar to Mac DTP users than the clever little page symbol used by *Pro Page*, if not as original. You can tell by looking at the grid and comparing it with the pictures overleaf that *Pagestream* is a freer, less rigid system.

USGOLD £24.99 ● Joystick

VERDICT

59%

minimise the flicker, but the question is should you NEED to?

The screen refreshes sometimes in a very clever partial way, which means you don't have to wait for the whole screen to move around. But this happens infrequently and sometimes it's darn confusing, as the screen leaves bits of text that have been moved in their old positions. A nice feature, though, is user-variable zoom, which allows you to tap in a percentage view.

What's Up Docs?
And finally the manual. Every package is only as good as either its interface or its documentation. At least one of these has to be clear, concise and easy to use. In *Pagestream* this is not the case. The interface is sparse and confusing and the manual is thick and uncompromising.

Soft-Logik have chosen to update the old ring binder manual with new pages of a different paper stock from the original and a slightly different

size, so flicking through the manual is like shuffling a pack of cards with your hands behind your back.

When you can find the right page, the manual is precious little help in a crisis, especially as all the subjects I wanted weren't in the index.
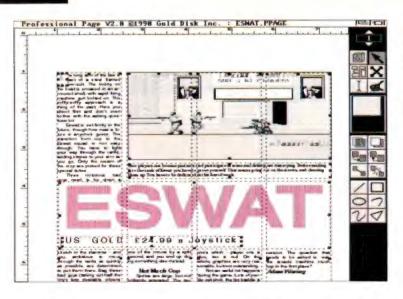
Verdict
Although *Pagestream* has a lot of good features, I'm still not very impressed. It takes a long time to do anything, and the lack of a colour display makes it hard to see how something will look until you print it out. And when you do it does lousy dot matrix prints, due in part to the fact that it needs many more than the usual couple of passes. Pagestream uses its own print drivers, so it's hard to compare them to the regular Amiga drivers in use with *Pro Page*.

It does have some unique features that are worth having, but alas it is still not crash-free or easy to use. I think the reason it crashes is not through the actual program going wrong, but bad memory management. You will have guessed its origins (from the Soft-Logik ads that appeared recently in all the Amiga mags talking about the best Atari DTP program) and that *Pagestream* is an Atari program that has been ported over to the Amiga over some years. It's not as nice looking as *Professional Page*, and it doesn't seem to work as positively.

In short, *Pagestream* is once again a very nice idea, with a nice specification on paper, but I still think it fails to deliver in practise.

LEFT: The top of our page, shown at 100% view. The imported IFF screengrab is only displayed as grey-scales, but the colour mark-up on the head-line stands out proudly as it will look on the printed page.

Dynamite Docs

The manual is all-new and is bolstered by the addition of an introductory video, which apparently will be available in a PAL version for UK use. I had a friend of mine play the NTSC original for me on his dual standard video and it's a very clear and interesting intro to DTP and an excellent quickstart to the program.

TThe manual is clearly written, in a very smooth and readable format, and although there's not much embellishment in the text, the info is there. The index was a little bit ropey, but the manual is brief enough and well enough bound to be flipped, so you can hunt and find something you want usually quite easily.

Already you may be getting an idea of how the two DTP heavyweights compare. Read on, as **PHIL SOUTH** investigates the vices and virtues of...

Professional Page 2

Four-colour PostScript DTP ■ Gold Disk ■ Price/details not confirmed
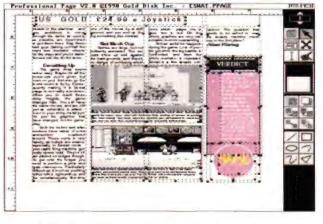
This new rev 2.0 *Pro Page* has the feel of a completely new program. It looks smart and works smart. I thought it was a tad slow until I used it after doing the same page on *Pagestream*.

For headache fans, the program features the option to load in non-interlace if you want, for less resolution but steadier display. It also features a full-colour display for all text and keylines, though imported IFF graphics are shown as grey-scale only. A big bonus from the point of view of the professional user is a full licensing of the Pantone colour matching system, which makes marking up accurate colours on screen a good deal easier.

There are a lot of options which you can set on bootup from CLI, or using the info selection on the Workbench menu – such as INTER-LACE=ON, FONTS=ALL, to make life easier when you load your document.

The Agfa Compugraphic fonts are used in both programs now, which contributes to the slow screen redraws that make both programs a mild pain in the butt. To be truthful, it's actually an unspoken rule with DTP that faster processors and max memory are a must for serious work. They speed up the redraws and memory management is a bit more stable. Obviously a fatter Agnes and 1.3 Kickstart are of benefit, but in actual fact I used KS1.2 and a skinny Agnes with no problems.

Dot matrix output on the Citizen Swift 9 I used for my proofs was sparklingly good on *Pro Page*, with the CG fonts coming up a treat, even

at the fiddly 6-point size used for the text. Obviously on the PaintJet the results were a lot cleaner.

Drop It!

One thing that neither program was particularly good at was the drop caps, the big coloured letter at the beginning of the text. I had to go through all kinds of tricky machinations and manoeuvres to get the text to flow around the caps.

On the downside there's no undo facility with anything except text delete. Although I didn't miss it, there were times when I thought it would have been nice. All Mac DTP programs have features like this, and I wonder how hard it would be to implement them in a package like this.

We also had a small problem with print-out on a dot matrix: the copy and pics seem shifted down and to the right of the page. Still, on lasers and inkjets the problem seems to go away, so I can't see it being a problem for final output.

ABOVE: And here we are at the bottom of our page. The tint for the Verdict box is, again, shown in its full glorious colour as marked up from the appropriate menu.

Verdict

The original *Pro Page* was my first Amiga DTP package and although this colours my judgement to a certain extent, it doesn't affect the way the two packages work. There were things I liked about *Pagestream* which *Pro Page* doesn't address, like text sizing with the mouse, but on the whole I found *Pro Page* to be a more solidly-built and more attractive operator. The output on *Pagestream* was decidedly ropey on some of the printers I tried, whereas *Pro Page* always seems to belt out top notch copies at the touch of a button, with the minimum of passes (saving trouble with colour ribbons).

The new interface, a sort of 3D affair in line with Workbench 2.0 I suspect, was nice to use, and clearly laid out. In fact the toolbox to the right of the screen was identical to the old *Pro Page*, so users of the older version will feel right at home. The one big drawback is that the PP 2 file format isn't downwardly compatible.
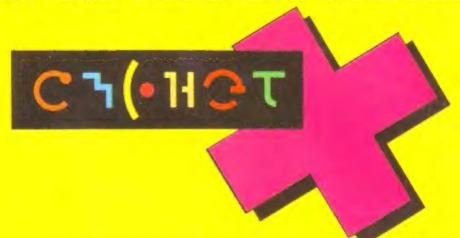
The conclusion I've reached about the two programs is that though *Pagestream* is a full featured program with a few nice features, the best all round workhorse has got to be *Pro Page 2.0*. It's solid and it's totally trouble free.

THE ONLY WAY TO GET THE MOST OUT OF YOUR AMIGA

THE WORLD'S MOST POWERFUL
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AMIGA ACTION REPLAY SIMPLY PLUGS INTO THE
EXPANSION PORT OF YOUR AMIGA AND GIVES YOU THE
POWER TO FREEZE MOST ANY PROGRAM

JUST LOOK AT THE UNMATCHED RANGE OF FEATURES

● **SAVE THE ENTIRE PROGRAM IN MEMORY TO DISK**
Special compacting techniques enable up to 3 programs to fit on one
disk. Now saves directly to disk as Amiga Dos - reloads independently
of the cartridge - even transfer to hard drive! Works with up to 2 Megs
of Ram - even 1 Meg Chip Mem (Fatter Agnus).

● **UNIQUE INFINITE LIFE/TRAINER MODE - NOW MORE POWERFUL**
Allows you to generate more and even infinite lives, fuel, ammo, etc.
Perfect as a trainer mode to get you past that "impossible" level. Very
easy to use.

● **IMPROVED SPRITE EDITOR**
The full Sprite Editor allows you to view/modify the whole sprite set
including any "attached" sprites. RANGE OF IMPROVED FEATURES.

● **VIRUS DETECTION**
Comprehensive virus detection and removal features to protect your
software investment. Works with all presently known viruses.

● **SAVE PICTURES AND MUSIC TO DISK**
Pictures and sound samples can be saved to disk. Files are saved
directly IFF format suitable for use with all the major graphic and
music packages. Samples are displayed as screen waveform.

● **SLOW MOTION MODE**
Now you can slow down the action to your own pace. Easily
adjustable from full speed to 20% speed. Ideal to help you through the
tricky parts!

● **RESTART THE PROGRAM**
Simply press a key and the program will continue where you left off.

● **FULL STATUS REPORTING**
At the press of a key now you can view the Machine Status,
including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.

● **POWERFUL PICTURE EDITOR**
Now you can manipulate and search for screens throughout
memory. Over 50 commands to edit the picture plus unique on
screen status "overlay" shows all the information you could ever
need to work on screens. No other product comes close to offering
such dynamic screen handling of frozen programs!!
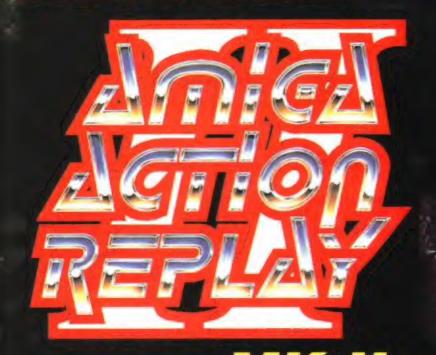
● **MUSIC SOUND TRACKER**
With Sound Tracker you can find the complete music in programs,
demos,etc. and save them to disk. Saves in format suitable for
most track player programs. Works with loads of programs!!

The DG40 is your standard black box. The inside has some fairly standard electronics to filter out the red, green and blue components of a video signal.

The DG40 may come from France, but it does have an English manual. Unfortunately this is sketchy and misses out on a lot of information — like which digitisers the unit works with, how to use the controls to best effect, technical details of how the connectors are wired and so on.

Is the DG40 better than the VidiRGB? In my opinion, not quite. Although it has two inputs (S-VHS and PAL) this is not as flexible as the Rombo offering, which can take virtually any input. Also, the lack of a manual button (to use the splitter with digitisers like DigiView which does not have an automatic mode) means that you're really limited to using VidiAmiga or Videon — and DigiView has the best processing software of the three. Well, I think it does.

It is possible to use the DG40 with DigiView, but it requires plenty of patience. The connecter that goes to the joystick port on the computer can be unplugged, and a small metallic object (paperclips seemed to work best under test conditions) rammed into the connecter.

The images produced by the splitter will then cycle through the red, green and blue options — but it's a far from satisfactory method, because the DG40 gives no indication of which colour it is displaying. That is, you're working totally blind.

DG40

Automatic RGB Splitter ■ £149.99

Third Coast Technologies 0257 472444

This product is the first one of its kind that I've seen from France. It's manufactured by Satellite et Telivision, and they do seem to know their onions when it comes to video gadgets.

What does an RGB splitter do? Most cheaper video digitisers work in mono only – they can only see one colour at a time, and so although black-and-white images are easy to produce, colour is decidedly tricky.

By using a B & W video camera and a set of filters (one of red, green and blue) the different parts of a colour picture can be read by a digitiser, and a full colour image built up. Of course, the camera must remain rock steady between the different changes — not the easiest thing to do when putting a slide of coloured plastic between the lens and subject.

An alternative to this is to use a colour video camera and an RGB splitter. The different red, green and blue elements of a picture are sorted electronically by the splitter and they are sent one at a time to the digitiser.

Seen it before

The only people, up until now, who have released any products in this area are Rombo Ltd. Their excellent VidiChrome colour digitising software, plus their digitiser (VidiAmiga) and their RGB splitter (VidiRGB) can be used to achieve the object — pointing a colour video camera at a picture or object and producing a computer picture of it on-screen.

The DG40 is a direct replacement for the VidiRGB splitter.
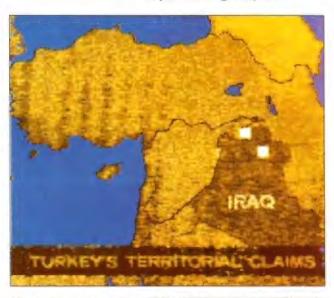
It's housed in a smart black metal case, and has inputs for composite (PAL) video and S-VHS (Super VHS: a connector commonly used by colour cameras). There's also a socket for the lead which connects to the joystick port (this is for switching between the colours and is included in the box), and the power supply plugs into the back — again this is included with the unit, which is something VidiRGB didn't come with as standard.

The controls for adjusting the video signal, these are contrast, brightness and colour saturation, are on the front. There's also a socket for the phono connector to plug into VidiAmiga: yes, you need yet another phono-to-phono lead. VidiRGB had its own built-in leadso managed to bypass this problem.

Plugging it into the Vidi digitiser and running VidiChrome is quite straightforward. The size, shape and weight of the unit means it sits happily on your desk, with the controls easily adjusted — where as VidiRGB is smaller and tends to get moved around with the cables. The DG40 is actually easier to work with.

Results

The end results are superior to those that are produced with the Vidi-RGB. I suspect that this isn't due so much to the superior circuitry inside the box, but rather the metal case — excess radio 'noise' upsets video signals and degrades them. Putting a metal shield around the unit seems to have eliminated this problem.

TURKEY'S TERRITORIAL CLAIMS

The quality of digitised images is sharp and distinct. The picture above was grabbed from a television — with a colour camera the images can be grabbed again and again to get the best image possible.

VERDICT

PURPOSE
Automatic RGB Splitter for mono digitisers grabbing static colour video signals.

SPEED: **EXCELLENT**
Not really important, but it does switch cleanly and fast.

DOCUMENTATION: **POOR**
Very little information given apart from connecting all the different video signals.

ACCESSIBILITY: **GOOD**
Easy to adjust picture colour, brightness, and contrast.

VALUE: **AVERAGE**
Very sharp picture quality — at a price.

FEATURES: **AVERAGE**
Very limited in that you can't put RGB into it — but what it does do, it does well.

Inside every Amiga, one chip alone has the choice of making decisions. This is known as the Central Processing Unit, or CPU for short. Apart from the A3000, every Amiga has a 16-bit 68000 CPU chip – and this only operates at the speed of the custom chips Agnus, Denise, Gary and Paula.

If a faster CPU is fitted, all that happens is that the computer can make decisions faster. Programs are not necessarily speeded up by massive amounts – it simply depends on how much decision-making they have to do. The graphics and sound chips don't run any faster, so arcade games are not speeded up much.

So most people who buy faster CPU chips have some complex software which runs too slowly. Typically these are graphics programs like

acheived by moving a link on the circuit board. Although it's easy to do, I think it's a pain having to continually open and close the machine. Unless of course you have the know how to fix a switch to the feature, and put the switch outside the computer.

The documentation supplied with the unit was incomplete. It consisted of a few photocopied sheets stapled together. The unit itself was clearly marked as an ICD unit, so why wasn't there an ICD manual? Presumably because the unit is so new, and I hope Third Coast can manage to include all the original pages in future.

Performance

The AdSpeed processes data at about twice the speed of a standard Amiga. It does this by a combination of doubling the clock speed (the

packed into as small a space as possible. Which is fine for technophiles like me, but it hasn't done anything to reduce the unit cost.

At the end of the day I'm not overly impressed. True it does double the speed of the computer – but for a large amount of money. Opening up the packaging and seeing a very small unit makes you wonder how much money people are making on accelerator cards, especially ones imported from America.

Another important point about the AdSpeed is that you can't fit a maths co-processor. These useful components (called the 68881 and 68882) require custom programming and so work on a minority of software – but they speed up things like ray-tracing to such a degree that it would be nice to see such a feature. Oh well...

ICD Adspeed

68000 CPU Replacement ■ Around £200 ■ Third Coast 0257 472444

Pixmate, Photon Paint, or perhaps ray-tracing software – which is notoriously slow, often taking many hours to complete generating a picture. Or perhaps faster Mandelbrot generators are your desire.

There is also one type of game which responds very well to accelerated CPU chips – 3D simulations. Games like Hard Drivin', M1 Tank Platoon, Mig 29 and F-16 Combat Pilot are greatly speeded up by such chips because they have to make many mathematical calculations to generate the 3D viewpoint.
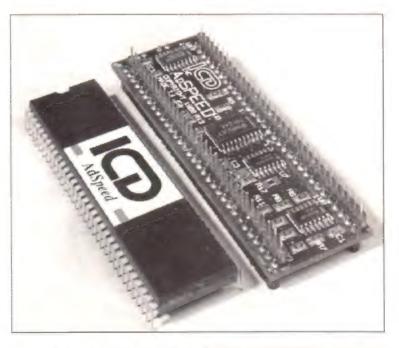
Market Gap

The AdSpeed appears to be a cheap accelerator card. It is extremely small (just over the length and breadth of a standard 68000, but over twice as tall). The chip itself sits on top, while underneath it is some circuitry to enhance the performance a little – to whit, 32K of static cache RAM and a clock crystal. More on this later.

Fitting it to the computer will automatically void the Amiga's guarantee. The steps involved are easy enough: take the case off the computer, remove the old processor, plug in the new one and put the machine back together again. Piece of cake – and the AdSpeed makes a snug connection, which means that it's unlikely to come out again unexpectedly. More than could be said for some accelerators.

Switching between accelerated and normal mode (a normal 68000 mode is needed because some software won't work with accelerators) is

RIGHT: The AdSpeed hardware. It is extremely compact and fits snugly and tightly into the socket where the 68000 CPU normally lives.

often-quoted MHz, Mega Hertz, which means millions of cycles per second) and also by having a small RAM cache onboard.

RAM caches are small areas that mirror what is in other areas of RAM. Put simply, they make it easier for the processor to change information – the bigger the cache, the faster the improvement. 32K really isn't a lot to give much noticeable difference.

No software was supplied with the unit, which is a bit of cheek – after spending £200 I'd want to make sure that the thing was working properly. Physically, the unit is up to the usual ICD standard – surface mounted components and everything

VERDICT
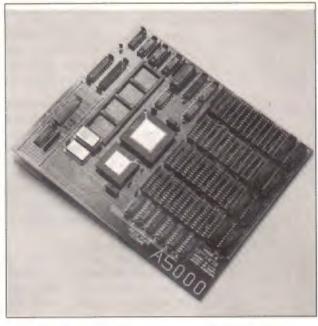
PURPOSE
Budget price accelerator card

SPEED: POOR
The slowest accelerator I've seen – or am likely to see for that matter.

DOCUMENTATION: BAD
It didn't even tell me how to fit the unit.

ACCESSIBILITY: AVERAGE
Moving a block to make a connection to turn it on and off is a bit below par – I've seen better and worse.

VALUE: AVERAGE
It's a cheap accelerator, and it does give a reasonable increase in speed.

FEATURES: POOR
32K static RAM cache and svelte engineering is about it, really.

This product has had quite a lot of publicity since it was announced last August. Some people even thought that it could walk on water and make a decent cup of tea – tasks that have eluded mechanical devices since before the fall of Babylon.

The A5000 is a largish card that sits inside the Amiga. It plugs in directly to the 68000 CPU slot – the 68000 is then plugged into a socket on the board. There are also a large number of slots for up to 4 Mb of 32-bit memory (the board is already fitted with 1 Mb of 32-bit memory as standard when it arrives).

ROM shadowing can be done automatically – that means copying the Kickstart chip into 32-bit RAM to speed up programs that access the routines contained within the Kickstart chip. The actual 32-bit processor is a

A5000

Budget 32 bit accelerator ■ £295

■ Solid State Leisure 0933 650677

ABOVE: The much talked-about A5000 board in all its glory. It's not expensive and it gets the job done.

people who are not at home with the Shell/CLI having some problems if they want to experiment, but that's to be expected with hardware of this relatively complex kind.

The nice thing about the A5000 is that it automatically boots up in accelerated mode. Admitedly if you run software that doesn't like the 68020 it's a pain to switch down, but most of the time you are using a machine that's happily blitzing away at lightning speed.

How Fast?

The A5000 tested had a 68881 maths coprocesser running at 20 MHz. This gave a performance around four or five times faster than a standard Amiga – and needless to say, at mathematical tasks, it was even faster.

One point about the product is that the manufacturing is not really very impressive. Rather than use state-of-the-art surface mounting and miniaturised discretes, the board looks a little bit old-fashioned. Underneath it were several wires just soldered on, obviously to get the thing to work properly.

I for one didn't really mind. OK, I had to be extra careful when handling the board, making sure that these wires didn't get dragged off – but once it was fitted and out of harm's way it didn't seem to matter that much to the functioning of the thing.

If you're desperate to get a full 32-bit accelerator unit but are strapped for cash then this is for you. Personally I could live with one – it's cheap, it's cheerful, and in the final assessment it gets the job done.

68020 – not as beefy as the 68030, but for the price it's reasonable.

There is also space for a FPU, which I generally calls a maths co-processor (FPU = Floating Point Unit). This – in case you didn't know – is a custom chip designed to do high-precision mathematics very quickly. Getting it fitted will cost an extra £70 – a worthwhile exercise if you want to run software which was programmed to work with it.

Up and Running

You also get a disk with the product as standard. This contains lots of useful utilities, benchmarks and (most importantly) the documentation about what the A5000 does and how to get the most out of it.

It's a pity that there isn't a printed manual, but at least a lot of information is included. I found that installing

the card was a bit of a pain. The 68000 was persuaded to come out, and two plastic lugs (supplied) were stuck to the circuit board, to give it support away from the socket. The 68000 snapped into place on the A5000, and the board stuck in the empty socket.

At this point there was a problem. On the A2000 and A1500, you don't need to turn the machine upside to get at the screws – but on the A500 you do. Every time I turned the Amiga upside down, the A5000 board slid out of the socket. It's not major, but do bear it in mind. Finally I put the screws in by turning the A500 on the edge of a desk and forgot about it.

Booting up the disk was a real pleasure. The software really is very nice – all the parts of what you need to copy to your startup-sequence are listed, and how to use them. I can see

LEFT: *Hard Drivin'* is the kind of game that benefits greatly from being played on an accelerated Amiga.

```
SPEED  ↑→ STUNT

1:12

SCORE    171
LAP TIME 0:53:04
BEAT 2:00:00 TO CHALLENGE
```

This program comes from France, and it's a company I've not come across before, Kimatek. It bills itself as a 'title generator', I can't understand why. Surely titling software is all much the same?

Whatever you call it, this kind of software is becoming more and more common on the Amiga. Essentially it's for creating titles and credits to put onto videos — though if you actually want to overlay the titles onto video, you'll need a genlock device.

The program needs at least 1 MB of RAM to run, although personally I'd recommend that you have a lot more.

RIGHT: The Editing Panel is used to type in text, select fonts and shadowing effects, and select the horizontal spacing.

We have two video titling packages to show you this month, both of which claim some 'professionalism' in their titles. **PAT MCDONALD** checks the first.

Pro Titler

Video Titling Software ■ £149.95 ■ HB Marketing 0753 686000

The titles that you put onto the screen can be written in any standard font, including colour fonts. The only problem is that the fonts you want to use have to be installed onto the *ProTitler* disk itself.

RIGHT: The Project Panel is used to change the colour palette, and also to select the effect used when each line of text appears.

Serious usage

If you install the program onto a hard disk, those problems are mitigated — the fonts can also go onto hard disk too, just by clicking on an icon. I pity the poor floppy users – it's an indication that *ProTitler* is aimed at the person with a lot of hardware.

Getting it up and running is not difficult, but actually using the package is tough. First, it automatically loads all available fonts into memory. On a 1 MB machine this takes up an awful chunk, and if you've copied a lot of fonts onto the disk you can actually run out after a few pages!

OK, once you've sorted out the problems of fonts and want to begin, the program starts to behave itself. All editing comes from an on-screen control panel. From here, you can make up as many pages of video titles as you want — within memory constraints. 1 MB gives about four pages of text: it depends on how complex your titles are.

You edit your titles by going down the screen, typing them in. Of course, you must specify which font you want to use — only one kind of font per line of text is permitted. Shadowing in any of the eight colours is fine, and you can also underline text at the click of a mouse button.

Once a line of text has been input, you can decide how you want it to appear. You can delay the times of

FIT FOR WHAT?

The manual for *ProTitler* has a very enlightening piece of text within it. This reads "KIMATEK S.A.R.L. makes no warranties, either expressed or implied, with respect to the program described herein, its quality, performance, merchantibility, or fitness for any particular purpose". Nice to see that Kimatek have such confidence in their product, isn't it?

the effect, and there are quite a few different kinds: wipes, fades, scrolls and so on. Indeed, *ProTitler* has effects that I've never ever come across before.

One other noteworthy feature is that pictures can be included on pages. These can either be IFF pictures or brushes — but note that including them drastically cuts down on memory. They can only use a maximum of eight colours.

Getting to grips

Ultimately, *ProTitler* is a very tricky program to learn. The manual supplied with it is very staid and lifeless — it tells you how to do everything, but that's it. No examples, or help, or troubleshooting guide — it all assumes that you know exactly how to use an Amiga, and dwells very little on the video aspect of the package.

There are an awful lot of things that this software does not do. It can't centre text in the middle of a line, or do left and right justified text. It doesn't microspace text — that is, the distance between letters is constant, but letters have different widths, so you end up with different-sized gapes between them.

When recording your 'takes' onto video, the program waits for you to click the mouse to go to the next page. This transition is pretty terrible — you can't roll lists of credits up the

screen. Also, occasionally *ProTitler* crashed: worse, I couldn't save any of the titles I created. The Save gadget just didn't want to know.

Most importantly of all, *ProTitler* does not anti-alias its text. Anti-aliasing is best thought of as smoothing: all the letters have jagged, pixellated edges. It will also put illegal video colours on-screen — these are colours that look fine to an Amiga, but bleed when recorded onto video.

ProTitler's results are, frankly, amateurish. If you are not too concerned about the quality of the results and don't mind an unhelpful manual then it will cope. Otherwise, avoid it.

VERDICT

PURPOSE
To produce video titles and graphics to enhance video production.

SPEED: GOOD
Because everything is loaded into memory, it doesn't hang about.

DOCUMENTATION: POOR
It's written in English, but is very unhelpful and unenlightening.

ACCESSIBILITY: GOOD
Having a control panel, it's easy to get at the features.

VALUE: POOR
I think it's too expensive. Should be called AmateurTitler and cost £100 less.

FEATURES: AVERAGE
It can load in graphics, but it lacks so many features that video artists use as standard.

BROADCAST TITLER 2
SUPER HIGH-RES UPGRADE

- **Available for Amiga 3000 and Amigas upgraded with new Super Denise Chip**
- **True 35 Nanosecond Resolution 1472 x 480 actual pixel resolution**
- **Up to 64 Colors per page – 4 per line**
- **Mix 16 Color Pictures with Super Hi Res**
- **Converts Amiga Fonts to Super Hi Res**

SWISS 100
SWISS 67
SWISS 50
MINERVA 37
MINERVA 50
SWISS 37
MINERVA 67
HOLIDAY 35
SPORTS 40
SPORTS 80
STANDARD FONTS

ABOVE: A saved picture from the demo included on the disk. Unfortunately it misses a lot of the colours from the original, but it does give an indication of the subtlety and brightness.

character font can be loaded — that means that you can have characters with accents and umlauts (as used in languages like German, French, Swedish, to name but a few).

There's an anti-alias function which makes the text you display look much less jagged and pixellated. Turning this on and off is a cinch.

The most important feature is the way that colours are used. Rather than sticking to 16 per screen — the normal limit for high resolution graphics — each line on-screen can use a different set of 16 colours. So hundreds of different colours can be used on the same screen: wonder upon wonders!

Unfortunately to get this performance AmigaDOS has had to be done away with. Broadcast Titler 2 will not multitask with any other program, due

scrolling different areas in different directions, putting eight-colour IFF brushes onto characters — it's there. It is also possible to load 16-colour high-resolution pictures in, although if you want to mix them with text you will in fact have to stick to just eight colours.

The fact that to get the best results you have to use interlace mode is also a pain — the menus are really difficult to read and cause severe eyestrain. Serves me right for not getting a decent monitor and flicker fixer, I suppose.

There are two things which help enormously when learning how to use the program. The first is there are lots of menus, and they are all kept as simple as possible. This is a better approach than cramming all the features onto a front control panel.

And here's the second video titler on review, promising also to give professional results. Does it come up with the goods? **PAT MCDONALD** investigates.

Broacast Titler 2

Video Titling Software (2 MB) ■ £199 ■ Amiga Centre 031 557 4242

Californian based Innovision Technology have been quietly updating their first video titling release, Broadcast Titler. Now they've released a full PAL version with more features and some bug fixes: it's pleasant to see that some companies listen to the users of their products and correct their mistakes.

For instance, one problem in the video titling area is that suffered by one of the official Commodore genlocks. A genlock, by the way, is a device that matches a video signal to the Amiga video output, and lets the video show on areas of the computer screen that are coloured with colour zero. Anyway, the Commodore A2300 genlock tends to mismatch the two images, putting the Amiga image on a different horizontal level to the incoming video picture. Innovision have added a little offset feature to compensate for this — a nice touch.

Another point is that professional video decks synchronised to the Amiga occasionally lock the computer up when performing fast forward or rewind. There's a new option which, when turned on, protects the Amiga from this annoying hazard. When you're finished messing about with the tape deck you can turn it off.

What's on

There is a host of features to this package. First off, any standard 256

ABOVE LEFT: The number of fonts you want to use has few limitations. You can even mix text to your heart's content. Again, a lot of the colours are missing — it's about time we upgraded our illustration system, to keep pace with graphics developments.

to the need for exact timing and synchronisation. Incidentally, this is the very same reason why most games don't multitask.

Although this is an American program, it produces a full PAL picture in interlace mode. Considering the amount of memory that this takes, it amazes me that, on a 2 MB system, up to 100 pages of titles can be stored in memory. Please note that the minimum setup to use the Broadcast Titler 2 is 2 MB of RAM — and, additionally, A1000 owners also note that at least 512K of this must be chip RAM.

BROADCAST TITLER 2
PROFESSIONAL
CHARACTER
GENERATOR
FOR THE
AMIGA
INNOVISION TECHNOLOGY

Using it

I would be lying if I said Broadcast Titler 2 was a piece of cake. It takes a long time to learn how to use all of the many transitions and effects, but take it from me that whatever effect you want — scrolling the screen in,

The other helpful feature is the manual. It's a ring-bound A4 monster with a comprehensive index. So if you want some help on a particular subject, it tells you where to look. There is an awful lot of information within it, and the design layout is not at all cluttered and takes you through the features by using a series of examples. It is one of the best manuals I've ever seen, but not exactly light reading.

So there you have it. A video titler that pushes the Amiga to produces really excellent titles. Broadcast Titler 2 is definitely one for the video enthusiast who wants the highest quality possible.

MORE ENHANCEMENT

Innovision have produced an upgrade for this program which makes use of the super high resolution (double normal hires) available but only if you have 1 MB of chip RAM and a new super Denise chip. Currently this is only available on the A3000 in this country, and no price has yet been decided for the upgrade.

It's interesting to note that this has been vetted by Innovision on 1.3 Kickstart Amigas fitted with a super Denise, and it worked fine. So you don't necessarily need Kickstart 2. Having said that, the upgrade cuts down the number of colours available per line of text, from 16 to just four. Swings and roundabouts yet again.

PD Update

Another adventurous journey of exploration into the universe of free software.
PAT MCDONALD is your guide to taking a walk on the serious side, while
MAFF EVANS dons hip street-attitude clothes and checks out the Demos.

AMIFX 2 (1 MEG)
AMIGANUTS

Wolf's dust: not the true end of a fractal, just a glitch caused by some naff programming.

The *Amiga Fractal Exchange* is still alive and well. The second set of three disks contains five still pictures and two animations of fractal graphics sets. One of the latter, Wolf's Dust, shows well what one of the pitfalls of generating fractals.

The problem is that fractals are inherently infinite. Researchers were rather surprised to find black interference patterns in a fractal under extreme magnification. These patterns are in fact caused by truncating the numbers generated by the program, and cause black whirls — something like a set of fingerprints.

The *AMIFX* is run from America by a guy called Cade Roux. It's good to see enthusiasm growing in this still theoretical area of computers.
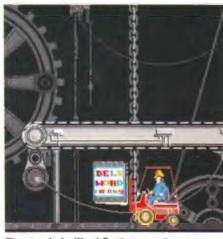
WORD FACTORY
AMOS PD LPD10
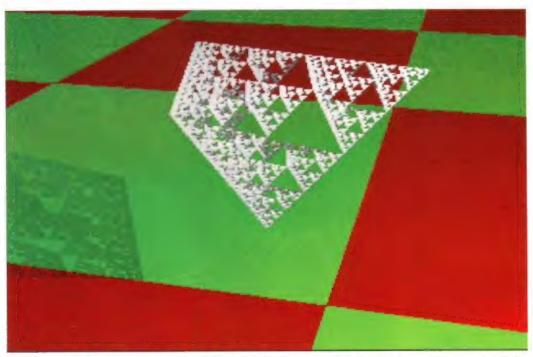
What a stunner. This is a simple educational program designed to help young children learn to spell. Heavy emphasis is placed on how words are actually made up, and the program uses joystick input only (a good idea — mice take a while to get to grips with).

Words of four, five or six letters can be tested on. The word is displayed for five seconds, and must then be assembled again from letters. A right answer lets you continue: a wrong one redisplays the word and invites you to have another go.

Word Factory is special because it's the prettiest, best-designed educational software that I've ever seen. Detailed, brightly-coloured pictures are used to give the illusion that it's all for a purpose: the letters are all picked up with a fork lift truck and then made into a load to be transported out of the factory. Well done to the programmer, Delwynn Farr.

The words in *Word Factory* must be made up of the right letters in the right order. Notice the quality of the graphics — very important to children.

An equilateral pyramid can be created from a fractal formula — some people have a bit more creativity than just looking at Mandelbrot sets.

Demos Corner

Picture if you will...a young man — like any other — is sitting at home with his Amiga. The machine has a hold over his waking hours. He can't get enough graphics or music to satisfy him. But money is tight. What can he do. Maybe he'll find his answer in the strange area we know as...the PD.

USA V IRAQ
PD SOFT DISK 1021

Rather topical at this time, what? This amusing little cartoon was put together in December last year — before the hostilities began, but it has managed to come out at an opportune moment nonetheless. Even if you think it's in a little bad taste, try and ignore this quibble and have a look. It caused a few chortles around here!

AGATRON ANIMATIONS
PREMIER PD DISKS 333 AND 337

Two more animation sequences by that German pixel master. The subject matter is that classic *Star Trek* and a nice helicopter. A couple of excellently done clips.

MORE AEROTOONS
17-BIT DISK 808

The Stealthy cartoon series of demos are now becoming near classics. This disk contains a few more in the series, with the same brilliant cartoon jets in some hilarious situations. If you haven't seen any of the series so far, then this would be a great place to start. Try it for a good laugh.

MORE WEIRD LITTLE ANIMS
NBS DISKS 561 AND 563

Two more collections of short animations that brought the little bubble-headed hero Chuck to our screens. Four more Chuck adventures are on the disks, along with some rather strange clips featuring a psychotic snowman and a cool and froody Coke can strutting his stuff. Not the most technically advanced pieces ever seen, but cute and enjoyable nonetheless.

WORK AND PLAY
AMOS PD LPD11

This is a set of three educational programs, again to help young children with simple tasks. Funtimes Table is a little bit like Snakes and Ladders, except that getting the answers right to multiplication questions gets you around the board. Two people can play the game, which makes it far more competitive.

Let's go Shopping is more down to earth. A shop counter is displayed, and the computer asks questions like 'If oranges cost 7p, then how many can I buy for 35p?'. The answer is selected with the mouse.

The graphics and style are excellent, but there does not seem to be any way of correcting wrong answers — a pity.

The last game — Click Clock — helps you practice telling the time on both digital and analogue clocks (those with a face and hands). Again the presentation is excellent. The programmer, Sparx, has made a fair effort and three educational programs on one disk is good value.

Click Clock is very easy to play — you just have to wind around the minutes and hours to the correct time. A better, more positive approach than 'What is the time now?'

NORTH C V1.3
AMIGANUTS

The latest update on Steve Hawtins' introductory C language is finally out.

There is not a great deal that is new here — it now comes on two disks, instead of three, which is handier. There have also been some bug fixes, and a rather rudimentary attempt at making the whole thing interrupt sensitive. If you do want the cheapest full version of C then indeed look no further than here.

Public Dominator - PD

What is Public Domain?

Public Domain Software is simply software that is allowed to be copied freely since the authors have decided to share their programs with all users. For this reason software can be grouped together on disks which are sold at an equal price depending on how many you buy. When you buy any of the disks on this page you may copy and give them to anyone! Each disk has a code number which is denoted with this symbol - ∎ - what follows the code number is a brief description of what is on the disk. All the programs are fully working and most come with documentation on the disk. We will also give as much support as is reasonable.

APPLICATION

∎ ∎ AMP1 - Home Business Pack UEdit the easy to use wordprocessor, Visicalc and VC 2 spreadsheets, RIM and Jbase databases and Amiga Spell the spell checker etc. 3 disks only £750!
∎ FFISH 195 - Micro Emacs V3.10 the text editor which is very comprehensive
∎ FFISH 254 - UEdit v2.5a the wordprocessor
∎ FFISH 143 - RIM V5.0 is a fully relational database
∎ FFISH 328 - AnalytiCalc V24-01a is a full featured system for numerical analysis and reporting (a spreadsheet)
∎ FFISH 93 - Dme V1.27 and MicroEmacs V3.8i the text editors
∎ SOFT 43 - Amiga Spell checker

TELECOMMUNICATIONS

∎ AMICUS 17 - COMM v1.33, Aterm V7.2, VT-100 V2.6 VTek V2.3.1, Amiga Host V0.9 for CompuServe
∎ AMUSE 39 - AHost, ATerm V6.1, Star Term and Wombat
∎ APDC 21 - Comm V1.34, Wombat V3.01, Handshake V1.20a C-Kermit
∎ SD 7 - Star Term, Wombat, Chat!, Aterm and Argo Term
∎ SD 29 - BBS-Amiga Host
∎ SD 31 - StarTerm V3.0 full features terminal prog. VT100 V2.0, Comm V1.3, AHost V0.9
∎ FAUG 62 - Access V2.6 comms package
∎ FAUG 99 - TAG the BBS
∎ FFISH 356 - NComm V1.9 communications program

NEW AMIGA USERS

∎ ∎ AMP4 - Starter Utility Pack This pack was compiled with the new Amiga user in mind, to enable them to get just about all the utilities that you may ever need, plus a wordprocessor and a database! Each disk in the pack automatically takes you into the friendly Work Bench enviroment, all the programs are icon driven and have any necessary documentation. The pack includes: The four main file compressors used on the Amiga - ARC, LHARC, Zoo and Power Packer. Dir Work the friendly enviroment that allows many of the CLI commands to be executed at the click of your mouse. Text Reader allows you to execute text on screen as a CLI command using your mouse. DFC2 the multi tasking disk copier. All the AmigaDOS Replacement Project commands, Virus X the virus detector and destroyer. Icon Meister the excellent icon editor. Comm the communications package. Machll the mouse accelerator. Disk Storage Deluxe displays information about disk drives. Disk Salv attempts to salvage data from damaged disks. New Zap the sector editor. Safe Boot the boot sector database and others. Also UEdit the wordprocessor, Amiga Spell the spell checker and JBase the excellent database.
All this is available on 3 disks only £750 from Public Dominator for the mega price of £750!

UTILITY

NOTE We have chosen the best disks with the latest versions of utilities to feature in this advert, however many more files and utilities are featured in these and other disks but are not detailed here. FULL details are to be found on our DiskCat for £1.00. Our DiskCat has a fast search option for ease of use.
∎ FFISH 366 - PrintStudio V1.2 print any text file in many styles, print part of or a whole picture, screen or window, also control printer and much more.
∎ FFISH 362 - ArchEdge V1.5 a shell setup for ARC, ZOO, LHARC
∎ TBAG 3 - Disk Cat the disk cataloguer
∎ TBAG 4 - DirUtil 5 the disk manager
∎ TBAG 6 - Biorhythms the life cycles program. Blitz Fonts speeds up fonts
∎ TBAG 9 - FastMem toggles on/off Expansion. FuncKey assign text to F1-F10. Word Count the number of words in a file
∎ TBAG 10 - AutoPic2 shows all (PIC HAM) in directory
∎ TBAG 13 - StepRate change step rate of disk drive
∎ TBAG 16 - CLI Wizard V1.2 mouse operated CLI introducer DIY demo with your own picture, text and sound! Planet will wrap a flat IFF picture into a sphere.
∎ TBAG 17 - Database Wizard V1.1 name & address database for 400 records.
∎ TBAG 18 - BIG is a screen magnifier DoTil V3.4 the directory utility
∎ TBAG 19 - Pyro a screen blanker shows a fireworks display
∎ TBAG 20 - Brush2Icon turns a brush or picture into an icon.
∎ TBAG 21 - VScreen allow screens to be larger than the physical one, also lots of window utils. WSize, WMove WMax
∎ TBAG 23 - Crunch2 archive a program but still executable. Hermit saves screen at keystroke using hot keys. Pointer Animator 15 colours animated pointers. ScreenX V2.2
∎ TBAG 24 - ClickDOS V2.04 directory lister QView V1.0 text file viewer
∎ TBAG 26 - Daisy Wheel IFF picture file printer
∎ TBAG 29 - ShowFont V3.3 shows all 256 characters in a given font. Read V2.0 Text Browser DFC2 Disk Format and Copy DosKwik V2.0 will save large file say a 2MB onto several disks
∎ TBAG 30 - MyMenu create your own menu on WB to run any commands. Icon Meister V1.4 THE icon editor. Disk Storage Deluxe V1.10 shows details of ALL mounted devices
∎ TBAG 33 - Background Music Player V2.0 Menu Runner V2.0

is a replacement WB menu bar. Subliminal Message Inducer V1.0 speaks a script in the background. FlamKey will cut all keyboard and mouse input until further notice. Disk View graphically shows a disk.
∎ TBAG 35 - Ruler a borderless window with a ruler init. LeftyMouse make the mouse ambidextrous.
∎ TBAG 37 - MegaWB makes your Work Bench screen as large as you like! Pop Up Menu V1.38 pops up a menu MuchMore V2.5 the powerful text file viewer
∎ TBAG 38 - MadSizer allows you to size a window from any corner. Display V3.29 an anim displayer for ANIM 3, 4 and 5. Hash and IFF all in any resolution
∎ FFISH 342 - IE V1.0 is an icon editor which can create and modify icons upto 640x200 pixels
∎ PDOM 278 - LHARCa V0.99a data compression program that is 100% compatible with MSDOS LHARCV1.13c
∎ PDOM 279 - European Software Agency Utility 1 Amiga ToolV1.5, BootGenerator V1.5, BootLeg V2.1, Character Editor V1.0,Coder Board V4.0, Cosaque V1.1, DCopyll Deluxe Presed V2.0, BlockV1.3, Font Ripper, Guru Maker V1.0, ISCAmiga v1.5, Memory Searcher v1.0, Menu Maker v1.0, NoTSetracker V1.0, Power Utility V2.0, PowerPacker V2.3a, PPMoreV1.2, Pseudo Ops, Save IFF Scanner V2.0,Scroll Maker 2, Seek Destroy, Seka Source Rescuer, StartupCoder V1.0, Structure HunterV1.0, Time Cruncher V1.1, TVField Writer V1.1, Vector Check V1.0, View Boot V1.01 Virus Expert V1.4, Virus Slayer V1.0, VirusKiller V3.10
∎ PDOM 280 - The Champions Total Utiles Vol 1 Boot Generator, Boot Girl, Bootmaker, BootWriter, Character Editor, Demo Maker, DiskX v2.2, Flash Ripper, Font Ripper, Guru Maker, Guru Master, Icon Master, Make A Menu, NoiseTracker, Power Packer V2.3b, PPMore, PPShow.Sceneray, Graphics Searcher, SetKey, Slide Show Maker, Time Set, Tristar Virus Killer and TxED
∎ FFISH 163 - Machll V2.4c features configurable, your help screen, mouse accelerator, PopCLI, Screen Blanker, Mouse OFF, SunMouse (activates a window by placing mouse it). Click To Front (bring window to front by clicking on it). Cycle (move a window or screen to back with left then right mouse button click). Window and Screen Shuffler, CLock, Alarm, Beeper etc.
∎ FFISH 186 - SimCPM V2.3 a CPM emulator
∎ FFISH 217 - Install Beep V1.1 will play a sampled sound instead of the usual screen flash. Snip It! V1.2 will allow you to clip text from any window
∎ PAN 28A - DCat disk cataloguer compatible with Superbase
∎ FAUG 47 - FunKey assign any text string to a function key
∎ FAUG 50 - Short Cut allows you to allocate text to a single key stroke thus CLI commands are easier to type
∎ PDOM 141 - ICONS! Draw Icons, Tool Icons and Disk Icons. Includes software to edit.
∎ PDOM 276 - Amvision Utility Disk 4 Virus X4, Zero Virus, Kill Da Virus3, PCopy, VCheck, Sectorama, FFormal v1.1, Pseudo Virus Killer 2, Boot Intro
∎ PDOM 300 - The Master Virus Killer V1.9 Recognises 105 viruses, a full list is on our DiskCat
∎ PDOM 277 - Dark Star Virus and Crunchers 2 BS9 KillerX. Kill'Em, Lamer Destroyer, Pseudo Ops, Killer and Seek & Destroy virus killers. Byte Killer, Crunch Master, Data Cruncher, DefJam Cruncher, Crunch IFF Pics with shower, DPaint Unpack, DragPack, Flash Packer, HQC, ISC, Master Crunch, Mega Crunch, Power Pack, RSI Cruncher and Super Cruncher
∎ FFISH 57 - AmCat a disk cataloguer Amiga Spell V2.0 spelling checker RSLClock V1.3 a menubar clock
∎ TBAG 31 - ShoWiz V2.0 show ANY picture with or without a script, 1 picture or several disks full, also play a music file in the background! Also show text files in any colour!
∎ PDOM 59 - Ameteur Radio Disk StarTerm V3.0. P81 and P10272 packet terminal programs, TA Term V5.0, a HAM Database for the Amiga Amateur Radio Group, Morse Code, Satellite Tracking and loads of HAM utilities. A must for serious HAM user
∎ FFISH 105 - Record-Replay V2.0 allows you to record and play back mouse and keyboard sequences.
∎ PDOM 62 - The Public Dominator Anti Virus Disk. Virus X V4.1, VCheck V1.2 (for memory), VCheck V1.2 for disk drives!, ZeroVirus V1.3 the fully integrated virus detector and killer. Also BootBlock Champion the utility and information on boot blocks.
∎ PDOM 93 - ARP v1.3 The AmigaDOS Replacement Project includes text manual files.
∎ FFISH 228 - Jazz Bench V0.8 is a multitasking WB replacement
∎ FFISH 229 - Alarming Clock.
∎ FFISH 246 - NoClick V3.6 stops drives clicking when no disk entered. LabelPrint v2.5b disk label printer

∎ FFISH 251 - DiskSalv v1.42. DiskSpeed v1.0 test disk speed
∎ FFISH 286 - FastDisk a disk Optimiser
∎ FFISH 290 - Xicon execute CLI commands from a script by clicking an icon
∎ FFISH 251 - SID V1.06 is a very comprehensive directory utility
∎ PDOM 53 - Fonts! 12 fonts Black Shadow, White Shadow, Avant Garde, Palo Alto, Basel, Monaco, Piegnot, Aldous, Celtic, Geneva and Rangers. All ready to use DPaint compatible fonts
∎ PDOM 54 - Fonts! 14 fonts Lineal, Bubbles, Ham, Couner, Vancouver, SanFran, Future, Premere, Hollywood, Broadway, Camelot, Stencil, Park Avenue and Los Angeles. DPaint compatible
∎ PDOM 55 - Fonts! 14 fonts Santiago, Microsoft, Silicon, Swansong, Helvetica, Mahattan, Bookman,Akashi, Times, Tiny Boxie, Longl, Andover and Pica. DPaint compatible.
∎ PDOM 304 - MessyDOS handles MSDOS formatted disks exactly the same way as you use files on native AmigaDOS disks. Fully functional, read/write version
∎ FFISH 325 - Batchman V1.1 is a program that allows the user to execute CLI programs and batch files simply by clicking on a gadget
∎ FFISH 304 - Verify V1.2 Walks a directory hierarchy reading all files, reporting any files that can't be entirely read
∎ FFISH 243 - ImageLab V2.2 is an IFF pictures manipulator
∎ NoClick V3.5 stops the disk drive clicking if there is no diskin thedrive. PassWord V1.21p you specify the password for your systemsecurity Pcopy V2.0 the excellent disk copier SimGen adds a 2 or 4 colour picture to your WB screen
∎ FFISH 360 - UUCP V1.06D An implementation of uucp for the Amiga, including mail and news
∎ FFISH 244 - BBChampion V3.1 load, save and analyze bootblocks. BootIntro V1.2 you specify The headline text of upto 44 characters and the scrolling text of upto 300
∎ FFISH 279 - MRBackup v3.3d the hard disk backup utility
∎ FFISH 300 - TitleGen v1.6 excellent script language that creates scrolling text on screen in any font and upto 500 lines long!
∎ FFISH 213 - 300 8 colour program icons!
∎ FFISH 168 & FFISH 169 - Matt Dillion disk special includes loads of utilities and source. Config V1.0, Clock V1.0, DME V1.31,DMouse V1.1, Backup V2.01, SUPLIB, LIBREF DRES V1.0, DASMV2.11,FILES V1.2, SHELL V2.1, FINDIT V1.0, LIBS V1.0, SCATV1.0, ADDCR V1.0, REMCR V1.0 & CMP V1.0You need both disks
∎ FAUG 41 - ARC V0.2 compatible with MSDOS ARC V5.0
∎ AMICUS 22 - Printer Driver Generator V2.3
∎ FFISH 258 - DMouse V1.2 is a versatile program that includesscreen/mouse blanker, auto window activator, mouse accelerator,popcli, pop window to front, push to back etc
∎ FFISH 131 - DFC is a disk copier that multi-tasks
∎ APDC 15 - Icon utilities full of icon files and creators. Some animated!
∎ APDC 18 - Floppy Disk Utils. Quick Copy V1.0, Disk Mapper, DiskSalvage. Virus check. System Utils Blitz V1.0 text editor. TimeSet.ACalc calculator Amiga Monitor V1.1. MeM Grab fast memorygrabber Directory Master V1.1
∎ FFISH 164 - DiskSalv V1.3 excellent file recoverer and undelete utility New Zap V3.18 the great file sector editor Zoo V2.0 the great file archiver
∎ FFISH 106 - Funckey a function key editor

EDUCATION

∎ ∎ AMP5 - Suitable for 8's and over features 2 excellent map drawing programs choose the Earth coordinates & it will draw the map allowing you to enter text and print or save. Evo follows the Evolution of life with skulls and maps etc. Chemistry element periodic table simply click on the chemical and a window appears showing every detail on that chemical including a picture of the crystal structure. Unit conversion is a program that allows you to choose all types of unit i.e. length, time, weight, speed etc and then do conversions and comparisons within these e.g. Feet to millimetres a very comprehensive program. German Language will teach the basics of the German langauge. Tutor is a speak and spell tutor. Also includes Study Aid Card. Hermes Formula. Cloud. The Weather. GEO Time. Gravity Simulator. Func2D. Gravity Well. Air Foil. Wave Maker and others. A 5 disk pack for £12.50!

MUSIC

∎ ∎ AMP11 - 5 disk pack of Sonix files & player for £12.50!
∎ ∎ AMP23 - 5 disk pack of SoundTracker V3 & files £12.50!
∎ PDOM 281 - Oktalyzer V1.1 the music composer
∎ PDOM 285 - GAME MUSIC CREATOR Supports MIDI
∎ PDOM 299 - MED V2.01 the music editor with MIDI

and Shareware Software

GAMES

Both our games packs are auto booting, menu driven, very easy to use disk packs

• • AMP8 - Game Pack 1. Clue as in Cluedo, Othello, Klondike, Canfield and Cribbage, Backgammon, Yachtc, TVision, MissleCommand, Cosmo 2 and 3D Breakout, Empire, Gravity Wars,Hanoi, Hockey, Blockoff, Jackland, Othello Master and Pacman. A 3 disk pack for £7.50!

• • AMP22 - Game Pack 2: Amoeba space invaders, CosmoRoids, Stone Age a Boulder Dash type, Back Gammon, Chain Reaction, Master Mind, Black Jack, CrazyEights, Klondike, Jig Saw, Keno, Daleks and Ratmaze,Monopoly and Escape From Jovi V3.0 3 disks for £7.50!

• PDOM 283 - Callisto 101 Very tough space strategy game, Daleks 0 30. Pontoon. Puzz10 and World and Zerg 2 adventures

• PSL1 - Space Blob a brilliant platform cavern game

• PSL2 - Mr Dig, help Mr Dig collect the apples and kill the monsters. Requires 1MB

• PSL3 - Q-Bod shoot blocks at the various random shapes decending on you, a Tetris variant

• PSL4 - Computer Conflict excellent speech and graphics in this all action arcade game

• AMUSE 13 - Bull Run an American civil war strategy game and Gravity Attack a very good arcade game

• AMUSE 14 - Battle Mech a strategy war game between robots

• AMUSE 15 - Rocker a Lunar Lander type game. Shiva the game of Life. Cycles is a Tron light cycles type game

• AMUSE 16 - Gravity Wars a space battle game with brilliant graphics and Larn the adventure

• AMUSE 17 - Cosmoroids an asteroids game. Tunnel Vision a graphical maze game seen from within the maze. Triclop invasion and 3D breakout that requires 3D glasses

• AMUSE 19 - Conquest the interstellar exploration game. The game of LIFE, Mile Stone the board game. Monopoly, and Trek 3 a Star Trek battle simulator

• APDC 3 - Monopoly, BackGammon Brickout, Klondike

• APDC 4 - Tunnel Vision. Othello Canfield, Dogstar

• APDC 25 - Shanghai Light cycles. Othello, Life3. Conquest

• FAUG 18 - Tunnel Vision the great maze game

• FAUG 27 - Klondike the card game and Triclops the 3D planet defend game

• FAUG 30 - Hack the adventure V10 1E

• FAUG 52 - PACMAN 87

• FFISH 194 - Moria V3.0 the single player dungeon simulationadventure game 1MB

• FFISH 273 - BattleForce v3.61 game

• FFISH 336 - Car V2 0 is a racing game

• FFISH 357 - Empire V2.1w is a multiplayer game of exploration, economics and war

• FFISH 62 - HACK the adventure

• FFISH 63 - LARN the adventure

• PDOM 77 - Paranoid the breakout type game

• PDOM 90 - Tennis! 1MB

• PDOM 79 & • PDOM 80 & • PDOM 81 - Star Trek 3 disk game by Twisted Images. 1MB. External Drive Required

• PDOM 215 & • PDOM 216 - The Star Trek 2 disk game by AGATRON Excellent animated graphic game

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• AMUSE 5 - ACO Face Maker create faces in IFF format using Deluxe Paint and the supplied Face Ed V2.0

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• FFISH 334 - FBM V0.9 image Manipulation library. Compatible with Sun, GIF IFF PCX, PBM bitmaps. Can input raw images and output Postscript and Diablo. Also does rectangular extraction, density and contrast changes. rotation, quantization, halftone, grey scaling etc

• PDOM 112 - Graphic utilities. Clip It!, ShowPrint II, Snatch,HamEdit Dissolve, AutoPics, ZapIcon, ImageTools, FilterPix,IconMaker Startle IFF to Icon

• FFISH 295 - Mandel Mountains V1.1 a Mandel Brot generator

PROGRAMMING LANGUAGES

• PDOM 211 - NORTHC v12 Steve Hawtins C compiler Featurescompiler, linker, disassembler, examples and tools. An excellentCcompiler for the knowledgeable and beginner alike

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• APDC 25 - Logo, XLisp, Modular 2, MVP Forth

• FFISH 140 - Stoney Brook PROLOG v2.3.2

• FFISH 141 - Contains the source code for PROLOG FFISH 140

• FFISH 181 - AM XLISP V2.0 of the XLisp interpretor

• FFISH 201 - Draco V12 the excellent programming language by Chris Gray Documentation on FFISH 77

• FFISH 37 - Little Smalltalk

• FFISH 91 - The Adventure Definition Language (ADL)

• FFISH 337 - CManual V10 is a COMPLETE C manual for theAmiga Includes 70 fully executable examples

• FFISH 339 - PCQ V1.1c Pascal compiler

• FFISH 347 - Cursor V10 Amiga BASIC Compiler

• PDOM 60 - Modula II compiler

• FFISH 314 - A68k v2.61 of the 68000 macro Assembler

DEMOS

NOTE: We have chosen the best demo disks to feature in this advert, however many many more demos, which are not featured here, are featured in our Disk based Catalogue. Our DiskCat has FULL details of all the demos featured within these named disks Our DiskCat has a fast search option for the best demo and music disks

• PDOM 1 - The Walker I animation of the Star Wars Walker 1MB

• PDOM 2 - The Walker II animation of the Star Wars Walker 1MB

• PDOM 65 & • PDOM 66 - Red Sector Mega Demo

• PDOM 73 - Star Trek the Enterprise leaves dock

• PDOM 74 - Star Trek craft featured in 4 animations

• PDOM 76 - Star Trek Shuttle landing on Star Trek craft

• PDOM 301 & • PDOM 302 - Laurel and Hardy demo very good animation demo of the comedy duo. External Disk Drive Required 1MB

• PDOM 305 - Outsiders Acid demo

• PDOM 306 - Cool Cougar 1MB

• PDOM 308 - COLT Mega Demo

• PDOM 309 - Dungeon Master III product demo of the game

• PDOM 310 - ASG merger with Soldiers of Light

• PDOM 311 - AMOS the Creator Demo II a product demo from Madarinn Software of the powerful programming package

• PDOM 312 - DiskNet Music Disk Vol1

• PDOM 317 - Share and Enjoy disk 58

• PDOM 319 - Rebels Megademo 2

• PDOM 320 - Upfront Cool Fridge Demo

• PDOM 316 - Flash Danish Know-how demo

ElectroCad, working on the latest McDonald bodge project.

ELECTROCAD
NBS U267

One of the more useful PD items — at least in my opinion. *Electrocad* is a bit like a painting program for drawing electronic schematic diagrams. Components can be selected from an overhead menu and then pasted onto a blueprint. Connections can be run to and from all the different components and a zoom option allows you to tidy up any mistakes.

There are quite a few useful features which put this above a standard paint program. One is that you can scroll the board around, allowing you to edit an area larger than the physical screen. Another is that there are a lot of in-built graphics specially designed for electronics — having to load and save each one individually into *Deluxe Paint* would be such a bind.

This is not the full version of the program, which is available from the author, Derek Pell. The full version is designed for electronics students, and allows finished diagrams to be incorporated into *KindWords* documents with the minimum of fuss. There's a lot it can't do, like autorouting a PCB from a schematic, but for your electronics hobbyist it's useful.

UGAM 5
SOFTVILLE

There's two great games on this one. The first is *Zzzep*, a very tricky scrolling maze game where you control a huge dirigible in a fight against time. A lot of work has obviously gone into the gameplay — the programmer, who is French and is (probably not) called Hironymus Jumpshoe must have spent days working on it. It's a game which will test your arcade reactions out very well.

The second is one level from the great Rainbow Arts game *Turrican*. It's good to see more game companies putting game demos out into the public domain — and I promise you, nothing is missing from that one level at all. Still as noisy and pretty: but you've got infinite lives, which does make it a bit easy.

ACC8
AMIGANUTS

The *Amiga Coders Club* is alive and well and continued to be written by Mark Meany. In case you didn't know the ACC is a set of disks designed to help people learn to program an Amiga in assembly language.

The original Mark 1 *Turrican*, Level One of which is available as a PD demo with infinite lives poked in to help you along.

Demos Corner

TIM NICE BUT DIM DEMO
DEEPER DOMAIN DISK 210

Using a collage of digitised frames and dialogue sampled from *Harry Enfield's Television Programme*, this demo recites an abridged version of one of Tim Nice-But-Dim Esquire's interludes. If you hate Mr Enfield then this would be no good to you at all! On the other hand, if you do like his humour and want to show off your Amiga, then check it out.

ROBOCOP ANIM
VIRUS FREE PD

There have been a few *Robocop* demos around for a while now, but this is still fairly well done. Marrying sampled dialogue with digitised HAM animation, the demo recounts that fateful meeting at which the new ED-209 throws a bit of a wobbler. Verhoeven fans could do worse than having a look.

INNERSHIP
EMPDL DISK 735

The main section of this demo is taken up by a duff breakout game, but the intro portrays a science-fiction story of suspense and horror. The moody opening consists of some purple mountains and a crashed spaceship, while the screen prints up the scenario to a rather atmospheric and doomy backing track. Nice intro, shame about the demo!

DEREK AND CLIVE
ULTIMATE PD DISK M033

Some of you may already be familiar with Peter Cook and Dudley Moore's rather foul and opinionated orators. This particular demo is sampled from one of their more disgusting moments as they talk about 'The Horn. The rest I leave to your imagination. It's almost a good job there are no graphics!

Oh, one more thing — if you boot from the second disk, a well-sampled rendition of Stewart Copeland's Equaliser theme can be heard. Cracking stuff.

ARE YOU EMBARRASSED EASILY?
ARC DISK D074 (2 DISKS)

A huge portion of the computer fraternity are interested in classic *Monty Python* sketches. So what should appear on the PD scene but yet another *Python Demo*. This time the glorious skit is the lesson in how to stop being easily embarrassed. The sound is a fairly clear sample, but it would be nice to have some nice graphics to look at. Still, it's worth a small heap of any Monty Python fan's dosh.

NODDY DEMO
ARC DISK D021

This demo is in a similar form to the *Python* demo (no graphics and sampled sounds on here). The programmer has pieced together some of Noddy's more dubious outpourings, which is the reason that Noddy books were banned from schools. Later the demo takes an interesting turn by actually splicing Noddy quotes with Python samples. Strange but fun!

Crazy Joe's

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298	Unicycle Animation *
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483	Elvira Demo
540	Python "Nudge, Nudge" (2)
574	Laurel & Hardy (2)
577	Python "Lumberjack Song" (2)
646	Predators Megademo (2)
744	Red Sector Cebit Demo
747	Popeye Meets the Beachboys
756	Scanners Animation (X) (2) *
762	The Run Animation *
773	Shark Animation *
821	Popeye Demo / Game
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853	Dragons Lair Demo *
854	Bread / Home & Away Demo
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906	Madonna Cartoon Animation *
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**WE ALSO STOCK
T.B.A.G., AMOS PD, AND
FRED FISH DISKS**

All the example tutorials and source files are for the Devpac assembler from HiSoft. Areas covered in this issue include the ARP libraries and a rather well written background about Intuition, the system which gives serious Amiga software a standard look and feel about them.

One further point of note is that this is the last issue with a run-down of simple 68000 instructions and how they work. More on actual programming is promised for the next issue — welcome news for those who know all the commands but have difficulty in writing and debugging code.

POWERLOGO
PD SOFT V106

This is a strange programming language. A long time ago Logo was hailed as being the ultimate computer language in education. It was based around the idea of having a controllable robot (a turtle) which could be directed to go forwards, backwards, and turn left or right. It also had a pen or two, which could be lowered to draw lines, and hence make up shapes and it could give people an incredible amount of knowledge about geometry.

This version (by Gary Teachout) can only be described as weird. All the standard Logo features are there, but PowerLogo also has a large amount of LISP in it. LISP (for List Processor) is a data structuring language which is most often used for artificial intelligence research.

The result? Well it is a very different computer language. The documentation is comprehensive and quite clear, but after a while your head begins to spin out. Needless to say it contains plenty of interesting features — but of what importance it is, who can say? Is this really the ultimate educational computer language of

tomorrow's intelligent machines? I certainly hope not. Still, I found it quite fascinating.

INSTRUMENTS
PREMIER PD 319

This is a set of 86 sample voices for use with Octalyser – but they can be used in any sample sequencer that uses RAW (binary) samples. If you haven't got a sound sampler and want some decent, quality samples to use, then give this a look. The quality is very good indeed, and they're not overly long – 10000 bytes or less.

Just to remind you: the Octalyser program itself was originally reviewed in these pages. Later on it transpired that Octalyser is not in fact PD — it's a full price commercial product from Germany.

NEWSFLASH 15
17 BIT

This is a disk based magazine with something of a pedigree. Martyn Brown edited it to start off, but parted company with 17 Bit due to various disagreements and dissatisfaction. He's just started again on NewsFlash and now it looks very good indeed.

There's really something for everything on the two disks. A couple of demos, pictures and some music: a full version of ProTracker V1.00: some games reviews: a news section and editorial comment: and a couple of bits and pieces for C and assembly programmers.

Maybe the only problem that I have with NewsFlash is that it is a bit too general for me, but a lot of data has been crunched onto both of the disks, giving it real value for money. It makes as an ideal introduction to the public domain scene, it also contains plenty of information, and makes for easy reading.

The PowerLogo documentation is extremely intricate. The subject can only be described as obscure, but if you want a different programming language, give it a look.

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The concept of the AnimBrush is one of the most useful and revolutionary graphics tools ever introduced on the Amiga. Yet strangely, since it was invented by Dan Silva for *Deluxe Paint III* and released, now almost two years ago, no other package has developed the concept further — until now that is. Oxxi and BazboSoft have at last extended the AnimBrush principle to HAM and have included many of the tools from *Photon Paint*, and have introduced animated versions of their unique Wrap, Bend and Distort tools. The stunning result — *Aegis SpectraColor* — confirms that the Amiga is at the cutting edge of low-cost computer graphics.

Photon Paint III?

SpectraColor is to *Photon Paint 2* what *Deluxe Paint III* is to *DPII*! The

INTERFACE

The *SpectraColor* 'Toolkit' comes in three sections. The default includes the drawing tools and the 64-colour palette (Interface A) and is similar to the *Photon Paint* interface. This can be expanded to include the full HAM spread Paint-Box (Interface B). Again, this is almost identical to the *Photon Paint* Paint-Box except for the addition of a magnified view of the HAM spread centred on the pointer, a useful device that would have been good idea to include in the screen-magnify tool. Selecting the ANIM icon on the toolbox toggles the Animation Toolbox (Interface C).

first few moments using *SpectraColor* prove this beyond doubt. The top-of-the-screen toolbox has altered slightly — simplified and refined for the better — and clicking the Anim icon replaces most of the drawing tools with VCR-like animation controls. But virtually everything else looks and works just as it did in *PP2*. The real changes though, are the excellent animation facilities.

HAM Animation

The *Photon Paint 2* rudimentary, page-flipping abilities that are accessed from the Project-Alternate menu or key presses have been retained, thus pages (frames) can be

A dynamic new paint package intends to put the Amiga well ahead of its competitors **BRIAN LARKMAN** twists bends and stretches to find out why.

Spectracolor

HAM Animation Package ■ No UK price yet ■ Oxxi USA-0101 2134227

WOBBLY-WALK WOMAN

A slightly more complex effect is created with the Free Wrap. The first and last parameters defined were both asymmetric and differed from each other. When animated the result is a strange wobbly walk that resembles a reflection in moving water. Here the wrap is illuminated from the right.

CHECKBULGE

inserted, merged, copied or exchanged. They can also be deleted, either singly or in total to prepare for a new animation.

'Animate' allows a range of pages to be flipped at a chosen rate; forward, reverse or ping-pong. This allows individual HAM pages to be loaded in, modified page-by-page and saved in Anim format. This is a laborious process if you have 20 or 30 frames to load, but with HAM images it is just about the only way. Of course, standard HAM Anim files load a whole series of frames in without problem, but it would have been nice if a series of consecutively numbered individual IFF pictures could be loaded in one go. This would allow non-standard sequences — frames from Sculpt, or even from a Mac or PC — to be utilised easily.

The Project-Alternate menu (or their equivalent key-presses) also allow you to select which page to view with Previous, Next and GoTo Page. These 'jumps' can be achieved even easier by using the VCR-like controls on the toolbox. As well as the obvious GoTo First, GoTo Last, Previous, Next and Play buttons there is a Play Enquiry button which has the same effect as the Animate menu selection. To the right of the Play buttons are the Define Animation tools, Define First, Define Last, Record and Define Path. Their function — and the whole process of brush animation in

SpectraColor — can be best understood by looking at the illustration in the panel entitled 'Checkbulge'.

Twist Bend and Stretch

Like Deluxe Paint III, SpectraColor can animate individual brushes by varying the parameters of its special effects over a series of frames, moving and transforming the object in apparent 3D. In DPIII this works either manually: limited to the line drawing tools, or automatically: with the 'move' requestor, when size, rotation and perspective moves can be applied to a brush. In SpectraColor, a brush transformation is given a start and finish position, or a path to follow, before the effect is applied. This allows some special effects to be animated in a way that is impossible to do in DPIII.

Nevertheless, for most tools and transformations that have an equivalent in both packages, the final results are similar. The real difference involves the tools that have no equivalent in DPIII — Wrap, Bend, Twist and Stretch. Examples of these are in the illustration on these pages, though in a magazine you cannot fully appreciate the moving image of an animation. The jagged edges of these experimental stills look far better when animated on screen.
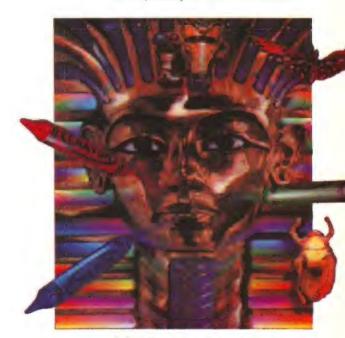
AnimBrushes

Just as a section of the screen can be captured and attached to the pointer as an object or a 'brush', so a section of an animation can be picked up as an animated brush — or AnimBrush. Like an ordinary brush these can be used freely through the animation, either painted on as they are, or transformed with a wrap or distortion. It is the use of this simple, innovative concept that makes brush animation on the Amiga unique.

AnimBrushes of a person taking a single pace, or the flap of a wing, the sway of a branch, the break of a wave, any of these can be pasted down in sequence to create a person walking or a bird in flight, or repeatedly out of sequence to animate a windblown tree or a stormswept beach. The possibilities are endless.

RUNCUBE
Cube 3 allows the animated figure to be repeated on all three sides. By rotating the viewpoint of the cube from the first to the last frame it can be made to partially rotate. Careful editing of the frames can make the rotation and the running figure on the sides seem to animate smoothly. The figure on the top gives the game away by only rotating a quarter turn!

RGB Studios have already shown the potential for collections of Deluxe Paint AnimBrushes with their Real Things series. These are only held back by the obvious limitations of a 32 colour palette. SpectraColor has no such restriction though, so it is more realistic, full-colour animated sequences can be used as brushes. For now however as they are all readily available it allows several DPaint AnimBrushes, with different palettes, to work together. SpectraColor's limitations though are those of speed and memory use.

Even with a 3meg Amiga B2000 with 1meg of chip RAM, only 20 full pages of HAM animation are possible in SpectraColor — less than one second, though much larger sequences can be constructed if movements and objects are small. This can be terribly inhibiting and difficult to overcome. As with all computer animation there are only two ways out: massive amounts of RAM or single-frame recording to video and both of these are expensive, RAM, though, is getting cheaper and there are now some reasonably priced single-frame recording solutions being developed in the US, based on 'domestic' VCRs. The only other relief on the horizon is provided by video compression chips which are here but are rather expensive and it will probably be 12 to 18 months

before they are available at more reasonable prices.

Aegis SpectraColor is slow but considering the complex transformations it is carrying out this is not suprising. An accelerator is a real advantage though. These two criticisms aside — and they are really limitations of the Amiga not the software — Aegis SpectraColor is excellent; a promise of wonderful things to come when really powerful Amigas are cheap enough for average Amiga users.

Hold your hand up in front of you. Clench your fist and then unclench it as you turn your hand. If you study this simple movement it becomes apparent that to animate it would take a great deal of effort.

The latest addition to the ever increasing number of Amiga animation packages aims to help you create animations of this kind. *The Animation Studio* is intended to reflect the traditional methods of hand-drawn animation employed by the film-making maestros so successfully for such a long time.

Surprisingly, this is Disney's first entry into the field of home computer

With Disney's unparalleled experience of animation behind it, this could be a major step forwards for animation. **DEAN AGAR** sees whether it shapes up.

Disney Software's
The Animation Studio

Animation ■ £99.99 ■ Entertainment International 0268 541126

animation. Not so surprising, however, are our high expectations of such a product. Has Disney given us the tool we have all been waiting for?

PENCIL TEST

The natural starting point in using *The Animation Studio* is the pencil test. This is where rough ideas and concepts are worked through to beautifully animated black-and-white sequences – hopefully!

Once the pencil test is loaded we are presented with a familiar Amiga *DPaint*-style display. The top of the screen contains the menu bar while a tool box and editing icons occupy the right-hand side. There is no palette, because black and white are the only colours available in the pencil test.

The tool box contains all the basic tools needed for most drawing requirements. Continuous and broken freehand lines as well as straight and curved ones are available. Outlined and filled rectangles, circles and elipses are also included. A flood-fill and brush pick-up complete the somewhat sparse tool kit.

The use of text is supported but the requester does not allow access to fonts on other disks. A program such as Font Assign is needed in order to achieve this.

Thin Skinned
Below the tool box are the frame editing facilities. A series of icons allows you to delete and add frames at will.

FLIGHT SEQUENCE
The saveable examples are certainly interesting, designed as they are to give you an insight into the tricks and techniques of animated movement. They can also look good with just a little added colour.

It is also possible to cut and paste frames into different sections of the animation. This makes any extensive editing of any sequence – normally a daunting prospect – a very simple thing to achieve.

Beginning an animation is also very easy. Two arrow icons allow you to add frames and flip through any frames you have already produced. Once you have created a number of cels containing drawings the excellent 'onion skin' effect becomes apparent.

While viewing any frame the three previous frames are visible in a range of greys, just as if you had dropped a fresh sheet of 'onion skin' tracing paper over them. This is the essence of traditional animation.

Once an image has been drawn it is possible to work on the next while still viewing the previous one. Using this feature it is fairly easy to create subtle facial expressions and body movements. Trying to animate in this fashion without the onion skin effect is almost impossible.

The greys on the previous frames can be changed to white so that you only see one or two previous images. On complex drawings having four versions on one screen can be more confusing than beneficial.

If you choose to, it is also possible to load in black and white digitised images frame by frame, or any other black and white IFF pictures. Pencil test supports the anim. format so you can import any black

and white anim. file. Once you have a sequence that you are happy with you can then edit the animation further in the exposure sheet.

THE EXPOSURE SHEET

The exposure sheet can be accessed whilst working in the pencil test. This makes editing of your frames and of the exposure sheet quick and simple.

The exposure sheet allows you to decide how long any frame will stay on the screen. It also allows you to repeat frames throughout an animation sequence, while having the image resident in memory only once.

In actual use, then, this would enable you to have a title screen showing for a few seconds, then have a dog running in a circle, say five times. You then have the dog running away and finally a 'That's all, folks!' type screen shown for a few seconds at the end.

You would animate the dog running in a circle and then running off. Using the exposure sheet you tell the program to repeat the circle sequence five times and then play the running off sequence. This can transform a short animated sequence into a fairly long and interesting animation.

Soundtrack Too!
Another feature, and probably one of the more instantly exciting, is the ability to link sounds and music with

any sequence you create. Any sound effect can be instructed to start on a particular frame. This would allow you to have a drum sound as a drum is hit with perfect synchronisation.

It's also possible to have a musical score playing in the background the whole time. This makes a string of simple sounds and music seem like a full-blown soundtrack.

So, at this point we should have a perfectly-animated black-and-white sequence with accompanying sound. Now the whole piece of work can be taken, in true Disney style, to the Ink and Paint Department.

INK AND PAINT

The Ink and Paint program is where all colour is added to a sequence. It is basically a paint program that supports simple animation. No further editing or pasting of frames is possible in this mode.

Again the display is standard Amiga style. The palette, which can be from two to thirty-two colours, replaces the editing icons. Some extra tools are also included in the tool box but its appearance is still somewhat sparse.

An interesting tool here is what Disney calls its 'Dither Option'. This is a fill tool that places any two colours together to create a third. If you examine this third colour closely you can see that it is a grid with every alternate pixel one of the two colours. From a distance the two colours mix 'optically' into the resulting third colour. Statistically it is possible from a 32 colour palette to create nearly 500 new colours.

Plain Colour

Because of the tool limitations the best finish you can hope for is flat filled shapes. Shading is a painful and laborious process and on anything but the shortest animation is pointless. The lack of an airbrush makes this even more difficult. It is not possible to achieve automatic gradients or wraps on screen.

This type of colour is acceptable in most character animation but its limitation is especially noticeable on backgrounds. For most users with Deluxe Paint this is not too bad as they can import DPaint backgrounds into Ink and Paint. Even so, Disney should not really have relied on this.

Ink and Paint also incorporates a stencil feature called Frisket. With this you can select any colours to remain untouched by any painting. If you load a background to your animation you can use Frisket to secure your characters and any other moving objects from being cleared. The background will be put under the masked colours.

One of the more useful features of Ink and Paint is the ability to change palettes from frame to frame.

Cel 7 of 50(Frisket)

DONALD DUCK SEQUENCE
Pencil test (NEAR RIGHT) is where your animations are born. Here the original free-hand sketches are worked up in black ink on white. Once you have your basic sequence ready and prepared, Ink & Paint is used to fill in the colour (FAR RIGHT). This mirrors the traditional style of working in hand-drawn animation. Finally you can import a background, so that your characters actually move around in a suitable setting (ABOVE). Best results are achieved when DPaint is used for your backgrounds.

RIGHT: Good results are certainly possible, but sometimes they seem to be more painful to achieve than is really necessary.

THE ANIMATOR'S LINGO

Cel - One piece of animation artwork. Derived from the word celluloid, which is a sheet of clear plastic (acetate) used in traditional animation for painting individual frames or characters onto.

Onion Skin - An animation technique that allows simultaneous viewing of several previous frames or cels. 'Onion skin' is thin paper, rather like tracing paper.

Exposure Sheet - The sheet that is given to the camera man telling him how long to film each cel. This also contains information concerning fade-ins/outs and dissolves.

Pencil Test - The initial working out of an animation sequence using layers of tracing paper and pencil.

Ink and Paint Department - The department that takes the pencil tests and develops them to full-colour artwork.

Frisket - A tacky transparent film used for masking areas that are to remain free from any drawing or painting.

You can create a blue sky turning into a night sky as your character walks through the desert, or give him a slowly-developing suntan. This could be Disney's one really big advantage over DPaint III.

While in Ink and Paint, it is not possible to play your animation according to the settings in the exposure sheet. For this you need to play the sequence using the Flicker player program supplied. This program can also be distributed freely to show off your own work.

CONCLUSIONS

Disney's The Animation Studio is a very well-presented and professional-looking piece of software. The manual is easy for beginners while being interesting to hardened users.

Sadly, the more interesting examples that come with the package, containing Disney's own animations of their characters, are protected by stern copyright warnings and cannot be saved or taken into Ink and Paint, so experimenting with Mickey Mouse in colour is not possible. This seems a shade unfriendly and unnecessary.

With any new animation package released on the Amiga having to face the established benchmark – Deluxe Paint III – it has to offer something special or sufficiently different to make it worthwhile. The exposure sheet is undoubtedly in Animation Studio's favour and can be very useful, and as a DPaint user I welcome this feature with open arms. The onion skin effect is also extremely helpful, as is the ability to change palettes from one frame to the next. Synchronised sound is also a plus.

By its very design, flying logos and inter-galactic space fights are not for The Animation Studio. But if you want to produce traditional character animation – which is what Disney are clearly aiming at – then this is the perfect thing to buy.

A lthough there have been bundles of music software put together by the likes of Roland and Dr T in association with Commodore, this is the first time ever that a dedicated piece of software for a synthesiser or single keyboard has been designed exclusively for the Amiga and especially aimed at the beginner.

It is the result of collaboration between Steinberg, the highly-respected German music software house, and Kawai, who have made a not inconsiderable dent in the synth and keyboard market of late. Kawai astutely judged the Amiga to be the computer to go for. As well as the software, manual, MIDI leads and interface it comes complete with a keyboard that can function quite inde-

If you're looking to make a start in music, this complete package may be just what you need. For the first time anywhere, **JON BATES** brings a review of…

Funlab

Complete Music System ■ £329 ■ Kawai 0202 296629

pendently of the software as a single, self-accompanying keyboard.

Into the Software

After everything is correctly connected the software turns the keyboard into a five-channel tone module and designates them as Melody 1, Melody 2, Chord, Bass and drums. The first screen invites you to play with the demo tunes. I quite liked these – not for their musical quality but for the fact that you could play along with them on either the black or white notes: the screen tells you which ones to play.

The main page of the sequencing software has those five channel names across the top of the screen. Directly underneath are the names of the instruments chosen for each part and beneath that are the controls: overdub, mute, quantize and a volume slider. A sixth fader acts as a master control for all other channels.

Simple tape recorder-type controls plus loop functions and tempo controls make up the 'transport controls' (Play, Record, Rewind etcetera) and a piano keyboard shows you what notes are playing at any time.

Make a Sound

The keyboard has 100 preset sounds to go at, plus the ability to create your own in the software. The sounds can be assigned to any of the four parts other than drums. Some of the

sounds are split – such as organ and sax, bass and ordinary guitar – so that you can create the illusion of have more than four instruments playing, a very practical solution that gets more out of the instrument.

As well as the sounds it has 100 built-in rhythms, each one with auto accompaniments, intros and endings. The keyboard has a huge set of drums, which includes lots of unusual sounds, which is not apparent from the documentation. It is a stereo keyboard with 61 full-size keys (but not touch-sensitive) and you can add

ABOVE: MAIN SCREEN
The main sequencing page. The five sliders work on separate parts of the keyboard, the one on the right is a master control.

BELOW LEFT: LYRICS
Be the star of the Karaoke crowd as your lyrics scroll along with the music – here ready for editing.

BELOW: NOTATION
Any part can be displayed in traditional notation and the notes playing are highlighted, but you can't edit them here or anywhere else.

either from the software or front panel of the instrument various effects such as sustain, chorus and dual voice. The keyboard is also available as a separate item with the model number FS680 with an RRP of £269.99.

Create a Hit

To record, you simply hit the record icon, having first made sure you are starting at the correct point. After the preset two-bar introduction you can record whatever you like, building up your track as you go. A built-in metronome gives both a visible and audible guide to keep you in time.

Although you can overdub on tracks and use the locators to cycle around sections you are a bit limited as to what else you can do. There are no edit or 'arrange' features, which means that you can't copy sections backwards and forwards either globally or individually for any track. This would have saved on precious memory space and enhance the sequencer considerably.

As it is, long pieces become very tedious and apart from the quantize feature for each track you have no other means of correcting errors other than to re-record it – and this too has snags. If you overdub a part and make a botch of it you are stuck with it since you can't delete the last overdub you did.

LEFT: The hardware includes the Kawai MS 710 full-size keyboard.

Add Weird Effects

The software records pitchbend, which sadly is only one tone up or down and awkwardly situated miles away from your left hand. I like the concept of on-screen volume faders and the fact that you can store the balance of instruments between the left and right stereo channels, but you can't record any alterations made in the balance while the piece is played and there is no provision for changing sounds in the middle of the piece.

The keyboard display on the main screen shows you the notes playing from the track highlighted, or all, depending on what is selected. Again, this could have been easily amplified into a simple form of editing. However, you can add to what is playing by holding down a key that is in the range of what Kawai call 'one finger ad-lib'. This adds an extra accompaniment fill or riff to whatever is going on. It is possible to create your own and store them by using a simple form of programming.

The manual tells you how to label each riff but fails to tell you how to create them. The same applies to the accompaniment and intro functions, all of which can apparently be created to you own liking.

Each individual part can also be displayed in traditional music notation – this is the only method of graphic display available and unfortunately there is no way that you can use this, or any other feature, to edit any of the notes – all of which makes this more of a novelty than a facility.

Write the Words

FunLab allows you to enter words for your tune so that, as the manual suggests, 'everyone... can sing in time'. Karaoke, anyone? The manual is a little inaccurate here as it mixes up entering the lyrics, which is done on the main screen, with editing them afterwards. You enter the words on the main screen at the appropriate

BELOW RIGHT: REGISTRATION
Save your personalised settings for the keyboard. You can store up to five in the keyboard at any time.

BELOW: SOUNDS
A very easy way of turning the keyboard into a synth and creating original sounds – just drag the sound graphs about until it starts to sound good!

BOTTOM: JUKEBOX
All part of making it fun – you select the prepared songs from this file selector.

points in the song and then flip to the lyric screen to edit them. My version of the software kept mixing up the letters Z and Y and producing German-style characters. Like all the functions, the lyrics can be saved as a separate file. To access all files there is a screen mistakenly called a Music Dictionary and should you want to play tunes one after another you can call them from the Juke Box.

More on Sounds

Up to 20 tone combinations can be stored thanks to the registration page which also saves information concerning special features: like 'dual' which stacks two voices and allows you to detune them to thicken up the sound.

It also stores data relevant to the performance of a piece – tempo, balance, overall volume – but this is quite separate to the same data as recorded by the sequencer. I think the idea is that you can store your favourite settings for playing the keyboard with its auto functions rather using the sequencer. Again, these are stored as an independent file.

The sound creating page is very simple to use and is perhaps one of Funlab's best features. You simply combine two waveforms and alter the envelope of each one and the relative

volume levels. Once you are happy with the result it can be stored as a separate named sound. Up to five new sounds can be loaded into the keyboard for any one piece and these of course can also be used by the keyboard in its stand-alone mode.

Top of the Pops?

FunLab is not a bad program. For a beginner it is a nice introduction and reasonably foolproof. However it is also very dogmatic in its approach to sequencing and doesn't allow the user to progress past the first few tentative footsteps. The serious lack of editing, copying, cut and paste features is sad and this, coupled with a dedication to the one keyboard, makes it difficult to give it a full and whole-hearted recommendation.

The inclusion of a couple of extra recording tracks would have enabled you, for example, to record bass drum and high hats separately, quantize them and then merge them to form a better and more solid track. Without any copy or editing facilities you are confined to playing the whole track from top to bottom and any fills or breaks you need will probably have to be planned ahead which makes the software rather restricting. The manual, although quite helpful, could have had a little bit more step-by-step guides to building up a recording and had one or two omissions.

Although I can see that Kawai are primarily thinking of selling it as a complete package one does wonder if there is a way of upgrading it to work with other makes of MIDI equipment or expanding it. After all, MIDI is about compatibility and a greater degree of flexibility in the software might help its sales even if they upped the price a little – the software and interface effectively only cost about £50 at present if you deduct the price of the keyboard. In their efforts to keep the program exclusive to Kawai products, and one keyboard in particular, I feel they have probably – and sadly – shot themselves in the corporate foot.

WIN A HOLIDAY AT
DISNEY WORLD!

Take a holiday for two worth over £1000 in Florida and visit Disney World

as Disney Software celebrate the release of The Animation Studio.

This is no Mickey Mouse competition – errm – well, yes, it is a Mickey Mouse competition, because you'll get to meet Mickey, Donald and all the Disney stars as part of a great week's holiday in sunny Florida.

A jet plane will whisk the winner and a friend or companion to Orlando in Florida, where they will stay for seven nights at the International Inn on International Drive. A car will be hired and put at your disposal for the week, so you can drive anywhere you want, but the highlight will be an entry pass to the fabulous Disney World entertainment park.

We figured you might need some time to organise yourselves on this one, so the holiday will have to be taken later in the year – between September and December 1991 – and that will also give you a chance to escape the onset of the miserable British winter. Not a bad deal, eh?

HOW TO ENTER

Simply write the answers to the following three easy questions on the back of a postcard or stuck-down envelope and send it to Mickey Mouse Compo, 30 Monmouth Street, Bath BA1 2BW. All entries must reach us by 15th March 1991 and please remember to put your name, address and phone number on your entry.

RULES

Employees of Future Publishing, Entertainment International or Disney are not allowed to enter. The judges' decision is final. No correspondence will be entered into.

Copright note: All images on this page and Disney character names are copyright © Disney and must not be used without permission.

QUESTIONS

1. Which of these is not a Disney cartoon character?
a) Mickey Mouse
b) Donald Duck
c) George Bush

2. The film *Silent Running* features three robots are called Huey, Dewey and Louie. Which Disney characters are they named after?
a) Donald Duck's nephews
b) Minnie Mouse's brothers
c) Three elephants in Dumbo

3. Which full-length Disney feature film features the classic song 'Bear Necessities'?
a) The Aristocats
b) The Jungle Book
c) Snow White

Taking the First Steps

In the third part of this essential series for all you serious beginners, **MARK SMIDDY** describes how to get the most from Workbench by adding a new feature previously only accessible from the CLI!

Most of this month's guide is concerned with a new program called *MakeAuto*, which is supplied on this month's Coverdisk. Look at the Coverdisk pages first to get a brief idea of what it's about.

First, though, a recap. By now you should be a little more familiar with what goes on inside your machine. From next month, we will assume you understand what is meant by terms like Open, Select and so on. Here is a quick resume:

Click: To press the left mouse button once over an icon.
Drag: Select an icon and move the mouse across the screen while holding the left mouse button.
Double-click: Press the left mouse button twice in quick succession.
Icon: A picture representing a Tool or Project (as below).
Project: A file created by a tool (shown as an icon).
Tool: A software program or application (shown as an icon).
Select: Click on an icon OR release the right mouse button when the pointer is on a menu option.

LESSON 7: USING MAKEAUTO

MakeAuto is a program to create an 'Auto startup' drawer on any Workbench disk and make the appropriate adjustments to the disk's Startup-sequence. The actual changes – like *MakeAuto* itself – are quite involved, so we will leave them for now. Please note, this hack requires Workbench 1.3 or 1.3.2.

1: CLOSE the write enable tag on your 1.3 Workbench disk. (When looking at the back of the disk, this is a small black tag in the top left corner.)
2: Boot your Workbench 1.3 disk.

Users with two or more drives proceed to step 4.

3: Remove the 1.3 Workbench disk. Now proceed to step 5.

Users with two or more drives
4: Insert the *Amiga Format* Coverdisk in any external drive.

All machines
5: Double-click (open) the disk icon marked Coverdisk 20.
6: Double-click (open) the drawer icon marked Beginners.
7: Position the pointer over the *MakeAuto* icon, press and HOLD the left mouse button. The icon will change to look as if it has been struck by lightning.
8: Now drag the icon over the RAM disk icon and release the mouse button. This will copy the *MakeAuto* project into the RAM Disk.

Users with two or more drives proceed to step 11.

Single drive users
9: Wait until the disk light goes out and remove Coverdisk 20.
10: Insert the Workbench 1.3 disk in the internal drive.

All machines
11: Double-click on (in other words, open) the RAM Disk icon.
12: Double-click (or 'launch') the *MakeAuto* software.
13: After a short time the program will announce itself and ask you if you want it to create an Auto drawer for you. Answering 'Y' will force *MakeAuto* to duplicate and rename

the Empty drawer on your Workbench disk. (This function will not work if you have removed the Empty drawer for some reason – if so follow the guidelines on Page 176.)
14: A few seconds later, *MakeAuto* will reply with a prompt informing you it is about to overwrite your Startup-sequence and ask you if this is what you want to do. Answer 'Y' at prompt to complete the installation.
15: Close all the drawers and directories by clicking the close gadget of the respective windows.
16: You should now continue with Lesson 8 which doubles as a lesson in Workbench's Snapshot facility.

LESSON 8: SNAPSHOTTING AN ICON

Snapshot is a frequently misunderstood feature of Workbench. Its main function is to fix icons at a specific location in a window. When you copy an icon using Workbench, it usually adopts its original position relative to its old window – which inevitably looks messy. You can move the icon somewhere else in the window – but when you close and re-open it, the icon is back where it started.

The situation gets even worse when something like *MakeAuto* creates a new drawer – because the new icon gets covered by the old one. For this example, we will use the Empty drawer – the same technique applies to all icons, however.

1: Re-open the Workbench disk by double-clicking its icon.
2: As the icons appear, you may notice the Auto drawer is covered by (or is covering) the Empty drawer. To fix this, select the Empty drawer and move (drag) it to a free part of the disk. (Note: you may have to re-size the window to do this.) You should

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WHAT IS A STARTUP-SEQUENCE?

A Startup-sequence (or startup script) is a series of instructions — AmigaDOS commands, actually – which the machine executes every time you switch on. That is why the Workbench takes so long to appear after you insert a disk. The Startup-sequence is very complex and you should not attempt to change it until you have a good appreciation of AmigaDOS and the way commands interact with each other.

The following instructions will allow you to examine it safely:

1: Boot your Workbench disk then double-click on it.
2: Open the Utilities drawer.
3: Double-click on the MORE icon.
4: At the prompt, enter:

```
S:Startup-sequence
```

5: Now press the <Return> key and a window will appear containing the first few lines of the Startup-sequence. When you have read the first screen, press the spacebar to display each successive page of text. Don't worry if all this looks like gobbledygook – it's simple when you know how. MORE incidentally, is a text viewer – it allows you to look at a text (ASCII) file without altering it.

6: Pressing the spacebar at the end of the file will close the window. To view the file again, just re-start MORE. Pressing the "H" key while MORE is active will give you some help on how to use it.

notice how the picture of the drawer has changed and looks 'open' which means it has been selected.

3: Press (and hold down) the right-hand mouse button.

4: Go to the Special menu and move the pointer down so that the 'Snapshot' option is highlighted.

5: Release the right mouse button. This operation will 'fix' the Empty drawer in place.

LESSON 9: USING THE AUTO DRAWER

This is the bit you have been waiting for – this lesson demonstrates how to use the new Auto drawer. It will also show you how to move Tools and Projects between drawers – and how to open several drawers at once...

1: Open (double-click on the icon of) the Workbench disk.

2: Press and HOLD either shift key.

3: Select (click) the Utilities drawer. Selecting icons – objects – in this way is known as 'multiple selection'. (See Figure 1.)

4: Keep the shift key held and open (double-click) the Auto drawer. You will notice both drawers open together – this works best if you hold the shift key down during the whole operation. (See Figure 2.)

5: Move the mouse pointer over the Utilities title bar.

6: Press the left-hand mouse button and hold the button down.

7: Move the mouse and a 'ghosted' window will move with it.

8: Release the mouse button and the Utilities window will suddenly jump to the new position.

9: Repeat steps 5 — 8 until you can see the Auto drawer in the Workbench window.

10: Move the Auto drawer's window out of the way as described for Utilities in steps 5 — 8 above.

11: Now for the clever bit: click and hold the clock icon and drag it from the Utilities drawer to the Auto drawer. The disk light will come on and the Clock icon will flip between the two drawers. Now do the same for the Calculator. (See Fig. 3.) Note: If you get a requester stating "Volume Workbench 1.3 is write protected." remove the Workbench disk, close the write protect shutter as described earlier, and re-insert it again.

A FEW EXAMPLES OF WHAT WORKS IN THE AUTO DRAWER

Workbench: Clock, Prefs, NotePad, Calculator, NoFastMem, AmigaBASIC, Say, PerfMon, CLI, IconEd, Fed, FreeMap, MEmacs, Keytoy2000.

Other: VirusX 4, RexxMast, TrackMon, PopUpMenu.

BELOW: Figure 1. Both drawers selected.

BELOW CENTRE: Figure 2 sees the Auto drawer ready.

BOTTOM: Figure 3 with Clock and Calculator in the Auto drawer.

12: Wait at least one second after the disk light goes out — it may flash briefly during this time; this is especially important for hard disk users! Now reset the machine with the "Vulcan-nerve-death-grip" (CTRL + right-Amiga + left-Amiga). When the Workbench appears you will also have a Clock and a Calculator too.

LESSON 10: CHANGING CONTENTS OF THE AUTO DRAWER

You will not always want to have a Clock and a Calculator running every time you boot the machine – the choice is up to you. This short lesson will demonstrate how to remove icons from the Auto drawer.

1: Open the Workbench disk.

2: Open the Utilities and the Auto Drawers as described in Lesson 9.

3: Hold either Shift key.

4: Select the Clock icon.

5: Select the Calculator icon.

6: Drag the Calculator icon over the Utilities drawer – notice how the Clock comes with it.

7: When the pointer is over the Utilities drawer, release the mouse button and drop both icons back in their original drawer. Release the shift key now. Note: it is only necessary to position the POINTER over the drawer

when copying or moving multiple objects. All the selected objects will move. However, when using this technique, be careful not to select more objects than you intend to.

LESSON 11: USING TRASHCAN AND DISCARD

You will have realised by now the Workbench disk is nearly overflowing; and some of the programs on there are superfluous to your daily requirements. Removing the excess — experts call this "housekeeping" – is something you will need to do from time to time.

Workbench has two methods for clearing files – the aptly named Trashcan and the Discard function. These work slightly differently, so we will examine them one at a time:

The Trashcan is actually a special Drawer. Think of the Workbench disk as being your office – where the drawers belong to various filing cabinets. When you are finished with something, you throw it in the waste paper basket – the trashcan. You can always retrieve things from the bin until someone empties it. Any objects placed in the bin stay in the office UNTIL someone empties the trash.
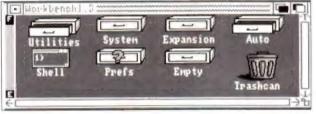
In effect, although some of the clutter is removed, the same amount of space is still used up. The same thing happens on a Workbench disk. When you move things to the trash, they still take up the same amount of space on the disk.
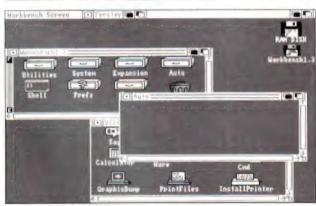
1: Open the Utilities drawer.

2: Drag the *InstallPrinter* icon to the RAM Disk icon.

3: Open the RAM disk and drag the *InstallPrinter* icon over the the Trashcan and release the button. Notice that *InstallPrinter* still exists in RAM Disk and Utilities.

4: Select Trashcan – notice how the image changes.

5: Open the Trashcan – you should see *InstallPrinter*.

6: Select "Empty Trash" from the Disk menu and you will see *InstallPrinter* icon vanish.
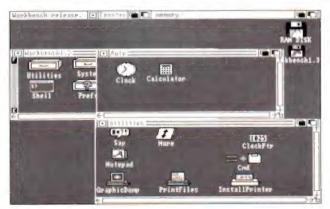
As this example proves, Trashcan is a bit of a white elephant. In this case we just duplicated an icon in the trash to show what happens. Normally if you move something directly to the trash, then empty the bin, it's gone for good! Getting rid of unwanted files is more usefully performed by Discard. This example assumes you have followed the instructions above:

1: Open the RAM Disk.

2: Select the InstallPrinter icon.

3: Select 'Discard' from the 'Workbench' menu.

4: A requester will appear like the one in Figure 4.

5: Click "ok to discard".

6: *InstallPrinter* will disappear from the RAM Disk. This is just like emptying the Trashcan. Once it has been deleted, you cannot get it back!

LESSON 12: SNAPSHOTTING SEVERAL ICONS

There are times when you might want to completely reorganise the visual layout of a disk. It may be you have discarded some files, added others, or just moved some things around. A typical case would be where you have moved some Tools into the Auto drawer described above. These could have come from elsewhere on the same disk or, more often, from a completely different disk.

1: Drag Clock, NotePad and Calculator (from the Utilities drawer) into the Auto drawer.

2: Move the icons around until you are happy with the layout.

3: Hold either of the two Shift keys down and keep it down.

4: Point and click (left button) on each icon in the Auto drawer in turn. (You should notice the image changes

ABOVE: Figure 4. The warning message makes sure that you really do want to Discard an item.

slightly to indicate selection.) Do this slowly or you might accidentally start one of the programs.

5: Hold the left button down over one of your icons and move the mouse a little. Notice how all the selected icons move at once? This is a quick way to make sure you have selected the right ones.

6: Release the Shift key.

7: Press the right mouse button and select Snapshot from the special menu as described above. The disk light will come on for a short time while Workbench updates the dot-info files. Your Workbench disk must be write-enabled for this to work.

Using Snapshot you can also fix the size and position of windows and even of any icon on the Workbench except the RAM Disk. And that includes the Workbench disk itself.

NEXT MONTH...

What those curious Workbench errors mean and a guide to Preferences.

Thus endeth the third lesson.

SOLVING MAKEAUTO PROBLEMS

Q: I have not got an Empty drawer on my Workbench, what can I do?

A: The best way around this is to copy an "Empty" drawer from your original Workbench disk. The fastest way to do this is to drag an Empty drawer into the RAM disk icon then drag it back onto your Workbench disk.

Q: Some of my software doesn't seem to work with Auto – why?

A: This really depends on the software. Auto launches Workbench Tools as CLI processes and some programs will behave differently when started this way. MORE is an example: if started from the Workbench it asks for the file to view; if started from the Shell/CLI it requires a filename. Similarly, ClockPtr (on the Extras 1.3 disk) will only start when the Workbench is active – and Auto works before this.

Q: How can I disable programs in the Auto drawer?

A: Just drag them to somewhere else on the Workbench disk.

Q: Can I run Preferences (to set the time) from the Auto drawer?

A: Yes – with care. If you do this, the Pointer and Printer icons will not work because they expect to

find Preferences in the Prefs drawer. You could make another copy of Preferences on the same disk – but this is a waste of space.

Q: The disk gets very noisy and the boot time increases dramatically when I am using Auto programs, why?

A: Once again, this depends very much on the software. Some tools – notably Say and Notepad – access other files on the disk and this tends to cause disk thrashing. Unfortunately, this is a price we have to pay for the flexibility of such a powerful machine.

Q: Can I use *MakeAuto* on my hard disk?

A: Yes. Just boot your hard disk in the usual way and install the patch as described for multi-drive machines. You can ignore the bits about Workbench 1.3, because the patch automatically writes to the boot disk.

Q: When I try to use *MakeAuto* on a different disk, the machine asks me for Workbench 1.3 and then complains that the patch is already installed. What can I do about this?

A: *MakeAuto* was designed to be easy to use on any system – including hard disk based

machines. For this reason, it always tries to work on a bootable Workbench disk. If you want to install it on more than one disk, just boot those disks. However, note it will only work on disks with STANDARD Commodore supplied Startup-sequences and a full AmigaDOS command set.

Q: Why won't the CLI window close now?
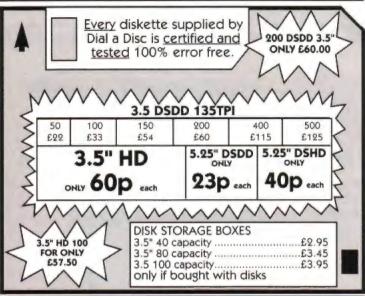
A: Some Tool in the Auto drawer must expect interactive CLI input. Resize the CLI Window, open Auto drawer, and move all Tools out. Now check one at a time until you find the culprit.

Q: *MakeAuto* won't install the patch on some of my Workbench disks. Why?

A: The program edits your Startup-sequence file and inserts four lines of code just before the LoadWB command. In order to do this, two things must happen: first, LoadWB must be there; second, it must have the right case. That is it must read LoadWB. If it says, LOADWB, LoadWb, loadwb or something similar, *MakeAuto* will not be able to find it. It is also possible one or more of the commands *MakeAuto* uses are missing. Try it on a COPY of your ORIGINAL Workbench disk.

The A-Z of Computer Terms

Builds up in monthly parts to a complete glossary. Part Three: O-P

Object: In AmigaDOS an object is USUALLY a file or another directory but it can be a device or assignment. See also: File

OS: Operating System. See also: Kickstart

Overscan: Special screen mode used by the Amiga where the picture has no visible borders – that is, it fills the entire monitor screen display.

PAL/SECAM: TV system in use in the UK and Europe. Gives 256 or 512 lines on a full screen. See also: NTSC

Palette: Part of the hardware where colours are mixed to achieve the end result. The Amiga has a 4096 colour palette which means you have a choice of 4096 colours, shades and intensities. Few artists use more than 20 or 30 shades in a [computer] painting but the effects can be startling.

Parallel port: Yet another name for the printer port.

Parent directory: The directory level one level higher than the current directory.

Parent process: The process which started a sub-process (sibling or child process).

Pascal: Computer language named after a great philosopher who would turn in his grave if he knew about it.

Path: The position in the directory tree which points to an object or group of objects – a pathway or road. See also: Directory

PD: Public Domain. Software which has been placed in the public domain by its author can be freely copied by anyone. It is however, still copyright and subject to the copyright laws. If it doesn't say Public Domain on it, it isn't.

Peripheral: External device such as a disk drive or printer which the computer system does not NEED to operate. Monitors are sometimes mistakenly called peripherals since they have to be purchased separately. An Amiga without a monitor is like a car with no wheels. See also: Device

Pipe: An AmigaDOS pipe is a small FIFO buffer based in RAM. Any process can write data to the pipe in the same way it could write to a disk. However pipes become FULL very quickly, so the receiving process must read from the pipe at the same time as the sending process is filling it. Unlike disks, a process may attempt to read from a pipe even when it's empty - without causing an error, it just has to wait until something enters the pipe.

NO VIRUS

Work bench

I'd just like to warn readers about the recoverable ram drive (RAD:) and certain virus checkers. If you mount RAD:, it gets installed as a resident structure. Many virus checkers, notably *VirusX* with the –K option, check the execbase vectors for unexpected pointers to resident structures: if they find any, they tell you that you may have a virus and offer to kill it.

If you've mounted RAD:, you'll get such a message every time you run the virus check — it doesn't mean you've got a virus. You can let the virus check kill what it thinks is a virus (but is in fact the RAD: resident structure pointer) but if you do, your RAD: won't be there after a reset! Hope this helps confused readers who get paranoid every time they start using RAD:.

Mark Lyhane, Manchester

NO REASON

① In an advert I saw, it said the computer came with the new 1084S 'D' monitor – what exactly does the 'D' mean?
② What is the difference between SIMM RAM and DRAM?
③ In demos the blitter is often used, how is this chip programmed?
④ Is it possible to buy Workbench 2.0 and install it on my A500?

NO REASON: The Cortex memory expansion box represents the limit as far as the A500 goes. You can't go any further without modifying the computer on the inside.

More of your hows, whys, wheres, whos and more with

PAT McDONALD acting as the resident know-it-all.

⑤ What exactly is this fatter Agnus chip and how do I find out if I have it?
⑥ With a full Cortex 8 MB RAM expansion on the left port of my A500, could I then fit 8 MB to make 16 MB?
⑦ Can you recommend a good 3D animation package that costs around £200?

David Turner, Wollescote

① *I don't know – why don't you ask them?*
② *SIMM RAM comes in neat little modules that you can plug in to many makes of hard drive and memory expansion. DRAM is Dynamic RAM, ie the actual RAM chips themselves – some memory expansions use these instead, because they're cheaper and more readily available.*
③ *I don't know – yet.*
④ *Some USA companies are selling it, but no Workbench or*

Kickstart 2.0 supplies have surfaced yet in this country.
⑤ *See AF18 for a full page on the subject. To see what sort of Agnus chip you have, use the Vector check program on AF15's Coverdisk.*
⑥ *No. 9 MB is the limit for any Amiga that doesn't have some 32 bit architecture, which is all of them except for A3000 and ones fitted with specialist accelerator cards. The problem is that the processor cannot physically look at more memory than that – it's just a fact of life. If you think it's easy to use that much memory, believe me it's not.*
⑦ *No. Oh all right, Sculpt3D or 4D has good animation but poor surface texturing. Turbo Silver is the inverse of this. I'm not doing either justice in saying just that – read the mini reviews in AF13.*

AF WRONG (AGAIN)

In *AF19* tips were given to A Patel and J Longden on using CLI commands. There are actually better ways to do them. To delete a directory and its contents, use: DELETE directory name ALL.

When installing a disk (making it bootable) on a single-drive system, disk names will not work. The best way to do it is to type:- INSTALL ?

This will prompt you to enter the parameters for the command. At this point take your Workbench disk out of the drive and type:-

DF0 :

Lots of readers

OK MINIGEN

In response to your 'advice' to Mr John Smith of Helston, which appeared in *AF19*, I feel I have to point out that the information you supplied to your reader is in fact erroneous.

MiniGen does not produce a UHF signal – composite video is output instead. Most people put the signal from the genlock out to a video in a standard video recorder, and then plug the signal from the video into the television set.

In answer to the question, Mr Smith can get an output from the MiniGen to his monitor by using the monitor input labelled "CVBS". Therefore, your own assertion that he will need a better genlock is actually wrong.

I should know, I designed 30% of the MiniGen!

Tony Leatham, Applied Systems Group Ltd

Sorry. I've never played with one – any chance of a review sample?

UNCONVERTED

I have two music programs, *Aegis Sonix* and *Quartet*, both of which I enjoy immensely. I am neither a musician or a programmer but I get a lot of fun in copying sheet music into *Sonix* and hearing the subsequent results.

As *Quartet* uses quality sampled instruments I thought I would use them with *Sonix*. No go. For some reason *Sonix* will not load the *Quartet* files: all I get is a list of instrument categories and no more.

I might be a bit green in such matters, but I thought that all types of programs use the IFF format for transferring data. According to the manual *Quartet* uses RAW binary. Is what I am trying to do possible and could you please tell me how to go about it? Or is it impossible and am I wasting my time?

T H Clark, Honiton

The ability to translate raw

samples (used by Quartet) into instruments (used by Sonix) is often found within the software used to sample sound in the first place. It would therefore make sense for you to invest in one: MasterSound, PerfectSound and Audio Engineer can all do this as well as record new samples.

A sampler also makes sense because you could tailor each sample to taste, and produce different mixes of the scores you are entering by changing the sounds for each part. Using the software to edit samples is no big deal; usually it's a question of finding the start and end of the sample on the screen, and that's it.

LOST FOR A QUIZ

Where can I get the Senior and Junior Quiz programs? I've seen them mentioned in "Get the Most Out of Your Amiga" but I can't seem to find them anywhere. They cost £19.95 each, if that helps.

F Holden, Speke

Kosmos are the people behind these programs, and many other educational software packages. You can contact them on 05255 3942.

BBC NOSTALGIA

I have an A500 with 1 MB of memory. Although it is great for games and word processing, I would dearly like to be able to program in BBC Basic. Just like the old days when I used to sit in front of my Acorn Electron for hours

LOST FOR A QUIZ: Kosmos have released many educational products, of which the Senior Quiz is probably one of the most popular — well I like it!

typing away quite happily. You probably won't print this but nobody else will help. So please answer the following questions:-
① Is there a BBC emulator (preferably costing less than £50) that will allow me to use 5.25 inch disk games written for the BBC model B?
② If I purchase a 5.25 inch floppy disk drive (probably the Cumana

one) will I be able to save and load from my Amiga as well as from the BBC emulator?
③ Will I be able to boot up my computer from this external drive?
④ I have Transformer. Will it be able to utilise the external 5.25 inch disk drive?

A S Caldwell, Wandsworth

PS Why are technically-minded

Amiga owners so mean and horrible to their fellow, if not so technically-minded, Amiga owners?

I refer to the spread of viruses. On one bootblock I was looking at where these words: "Please do not spread the viruses on this disk as they are for development of new virus killers only. Only spread to LAMERS."

① Yes, a BBC emulator is available from HB Marketing (0753 686000) for £39.95. It will not run the vast majority of BBC software, but it does run BBC Basic very well. So at least you can program the way that you want to.
② Yes. Although an extra command will have to be put in the startup-sequence of your Workbench boot disk. This command is:-

MOUNT DF2:

The external drive will now be recognised as DF2: as opposed to DF0: (the internal disk drive).
③ Not a chance.
④ Probably, always assuming that Transformer (a horrendously slow software PC emulator) will let you call the disk drives in Amiga terms, ie DF0: and DF2:. If it doesn't do this – and I've never played with Transformer so I can't say for sure – then it will take some intricate tinkering to get it working properly.

As to your last point, just put it down to the small-mindedness of a minority. To some people, being

I own a small company involved in the manufacture of high-technology equipment for specialised industries. I am looking to computerise my entire operation. I need the answers to the following questions to enable me to decide if the Amiga is adequately suitable for my purpose.
① Can the Amiga equal or better the Mac II or IBM MCGA/VGA displays?
② Can it display and process broadcast quality colours?
③ Has it the capability to process at least seven-million instructions per second?
④ Does it support high density storage devices, such as optical drives and hard drives of 200 MB capacity?
⑤ Will it support high density floppies of 1.44 MB capacity or thereabouts?
⑥ Is the Amiga supported by professional 3D CAD/CAM and 3D modelling programs?
⑦ Is there a fast word processor? Kindwords is much too slow.
⑧ Is there a full colour Desk Top Publishing package that can output at colour newspaper quality (including photographic material) with postscript support?
⑨ Is Networking possible on the Amiga; at least 10 systems?
⑩ Is there a colour printer that can output full colour prints of a quality similar to a colour newspaper?

P Field, Woking

You don't mince words. If you're seriously considering setting up such a system then I'd recommend employing a specialist, but to answer your questions:-
① The answer is 'yes but'. The machine will cope, normally, happily with 64 colours on-screen (extra half brite mode). 32 of these colours are half as dark as the first 32, so it's a bit limited. This isn't amazing compared to the systems you mention, but "Hold and Modify" mode can be used as well. HAM puts a bit of a strain on the processor, but around 4096 colours can be displayed on the same screen.

If you want a seriously overpowered graphics solution then take a look at 24 bit image cards. These can produce pictures with over 16 million colours – more than most people can actually differentiate between. Both software and hardware are gradually emerging to use this state-of-the-art graphical standard.
② Again, 'sort of'. Video output can be taken from and to the computer, but some Amiga colours are illegal – that is, they bleed into other areas when recorded onto video tape. Typically these colours are reds and whites, which overload standard video conventions. However, the Amiga is much better in this area than most other machines.
③ Not as standard, but accelerator cards can be fitted – I believe the fastest available at present is 50 MHZ, which gives a satisfactory performance compared to any microcomputer.

(The term MIP has very little relevance these days, with so many different processor architectures around).
④ Yes. With a SCSI controller card you can control such devices, which usually have a SCSI interface on them. See AF17 for more information.
⑤ It does, but they are hard to come by in this country at the moment. In Germany and the USA, many companies sell them, but I've yet to find a UK supplier.
⑥ CAD programs (Computer Aided Design) are becoming more numerous all the time, with about seven products available at present. Maybe it's time for a roundup... CAM products (Computer Aided Manufacture) are non-existent – I don't think anybody is using the Amiga in this area. 3D modelling is extremely well supported, with Sculpt 3D, Turbo Silver, and the forthcoming Real 3D to name but three.
⑦ Again, in AF17 we supplied a roundup of word processors. The fastest were WordPerfect and OfficeWrite, but every other one covered showed KindWords a clean pair of heels.
⑧ Professional Page 2 can do that – see the review on P113.
⑨ Yes. Cantenanet sell such a network: phone 0993 778271.
⑩ I really can't answer this question definitely (it's not the sort of thing people let us review) but the answer has to be yes, given the amount of colour laser printers now available.

AMIGA SOFTWARE

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1st Letters and Words (3-8 yrs)	17.95
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688 Sub Attack	17.95
9 Lives	17.95
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Action Stations	22.95
Advanced Tactical Fighter 2	17.95
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Rick Dangerous 2	17.95
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Robocop 2	17.95
Rogue Trooper	17.95
Second Front	22.95
Sega Master Mix	17.95
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Shadow of the Beast	17.95
Shadow Warriors	17.95
Shock Wave	17.95
Simulcra	17.95
Sly Spy Secret Agent	17.95
Soccer Mania Compilation	17.95
Space Quest 3	29.99
Space Shuttle Simulator	32.95
Speedball 2	17.95
Spell Book (4-9 yrs)	14.95
Spiderman	17.95
Spindizzy Worlds	17.95
Sporting Gold	22.95
Spy Who Loved Me	17.95
St Dragon	17.95
Star Command	22.95
Star Control	17.95
Starflight	17.95
Storm Across Europe	22.95
Stormovik	22.95
Street Hockey	17.95
Strider 2	17.95
Stun Runner	14.95
Super Off Road Racing	17.95
Supremacy	22.95
SWIV	17.95
Team Suzuki	17.95
Team Yankee	22.95
Teenage Mutant Hero Turtles	19.99
The Final Conflict	17.95
The Immortal	17.95
The Last Starship	17.95
The Light Corridor	17.95
The Ultimate Ride	17.95
Their Finest Hour Battle Britain	22.95
Things to do with numbers (5-10yrs)	14.95
Things to do with Words (5-12 yrs)	14.95
TNT Compilation	22.95
Toki	17.95
Torvak the Warrior	17.95
Total Recall	17.95
Tournament Golf	17.95
Toyota Celica GT Rally	17.95
Turrican 2	17.95
TV Sports Baseball	22.95
Typhoon of Steel (1 Meg)	14.95
Ultima 5	22.95
UN Squadron	17.95
Unreal	22.95
U.M.S. 2	22.95
Vaxine	17.95
Voodoo Nightmare	17.95
Wargame Construction Set (1 Meg)	22.95
Welltris	17.95
Wheels of Fire	22.95
White Death	22.95
Wings of Fury	17.95
Wings (1 Meg)	22.95
Wings (512K)	22.95
Winning Tactics (Kick Off 2)	6.99

Title	Price
Wolfpack (1 Meg)	22.95
Wonderland	22.95
World Championship Soccer	17.95
Wrath of the Demon	22.95
Xiphos	17.95
Ziriax	14.95
Z-Out	17.95

BUDGET TITLES

Title	Price
Advanced Fruit Machine Sim	6.99
Afterburner	7.99
Barbarian 2	7.99
Batman Caped Crusader	7.99
Double Dragon	7.99
Fantasy World Dizzy	6.99
Fast Food Dizzy	6.99
Fast Lane	4.99
Formula One Grand Prix	4.99
F.C Manager	6.99
Gauntlet 2	7.99
GFL Baseball	6.99
GFL Football	6.99
GFL Golf	6.99
Ghost Chaser	6.99
Hitchikers Guide	9.99
Hostages	7.99
Last Ninja 2	7.99
Leather Goddess	9.99
Outrun	7.99
Planetfall	9.99
Postman Pat	7.99
R Type	7.99
Road Blasters	7.99
Rock Star Ate My Hamster	4.99
Silkworm	7.99
Super Hang On	7.99
Super Ski Challenge	4.99
Thunderblade	7.99
Treasure Island Dizzy	4.99
Wishbringer	9.99
World Class Leaderboard Golf	7.99
Yogis Great Escape	6.99
Zork	9.99

CITIZEN PRINTERS

Item	Price
Citizen 120D Plus	139.99
Citizen Swift 9	230.00
Citizen Swift 24	320.00
(includes free connecting cable)	

MANNESMANN TALLY PRINTERS

Item	Price
MT81 (130/26 cps 80 col)	159.00
MT130/9 (300/75 cps 9 pin 80 column)	399.99
MT130/24 (300/150 cps 24 pin 80 column)	499.99
(includes free connecting cable)	

LOCKABLE DISK STORAGE BOXES

Item	Price
40 Disk Storage Box	7.95
80 Disk Storage Box	8.95
100 Disk Storage Box	9.95

JOYSTICKS

Item	Price
Cruiser (Black, blue or multicol)	8.99
Quickshot 3 Turbo	9.95
Zip Stick Autofire	14.95
Competition Pro	12.95
Competition Pro Clear	13.95
Competition Pro Extra	14.95
Competition Pro Glo (Green)	17.49
Competition Pro Glo (Pink)	17.49
Cheetah 125 Plus	7.49
Quickjoy Jetfighter	12.99
Speedking	9.99
Speedking Autofire	10.99

an 'expert' consists of considering everybody else as totally incompetent. They spread viruses so that people can use their computers even less. They don't do anything constructive to help, all they can do is hinder. The technical term for such a slag-off merchant is 'SMARTARSE'.

Incidentally, I usually work on a standard 1.2 A500. The reason is not that I prefer to but by doing so I appreciate the problems of people who have just bought their machine.

CORRECT SPEECH

PRIZE WINNER

I have found "GTMOOYA" to be of great help as I have had my computer for only five months and had little experience with them before that. I have, so far, found a couple of, what I believe to be, errors.

On pages 117 and 118, there are instructions for making the computer say hello. The command in error is this one:-

```
DELETE UTILITIES ALL
```

This will totally empty the utilities drawer, which seems a shame because that's where the Say command is! Instead of making space like that, it makes more sense to put programs from the utilities drawer into the Trashcan, and then select Empty Trash from the top menu.

Make sure that you don't put the Say command in the Trashcan! Get rid of the contents of the Demos drawer in the same way.

The next problem is further down the same page. It tells you to insert the following line into your startup-sequence:-

```
SYSTEM/SAY :Good Morning, O
Superior Being. How can I be of
service?"
```

As I've already said, the Say command is in the utilities drawer, whereas the above command says it's on a disk called SYSTEM. The following line fixes that – replace that line with:

```
SYS:UTILITIES/SAY "Good Morning,
O Superior Being. etc"
```

On a different point, I can't get the CLI tool SysInfo 2 mentioned on page 163 to work. When I click on the icon, all I get is a list of instructions.

Mark Gregory, Portishead

Thanks very much for the fixes to the problems with talking Amigas. By and large they were caused by the arrangement of Workbench 1.3, which was different to the 1.2 version from which that particular article was drawn. A £50 mail-order voucher should be on its way towards you even as you read this. As for Sysinfo, it's a CLI tool – that means that rather than click on an icon, you are supposed to type the command at the CLI.

JUMBLED CNOIS

I've got a problem. When I boot up a disk and I've been copying and changing icons, very often they're displayed one on top of the other when I double click on the disk. I can rearrange them of course, but when I reopen the disk it's back to a jumbled heap. HELP!

S Kirvan, Sprotborough

What you need to do is not too tricky. First, arrange the window as you want it to look. Then select all of the icons. You do this by holding down the shift button, and clicking on each in turn. When they're all selected, let go of the shift button, press the right mouse button and go to the SnapShot option on the menu at the top of the screen. Let go of the button and the changes are recorded onto the disk.

STILL MORE MEMORY

I am considering buying the KCS PC emulator. As this fits into the trap-door expansion underneath the Amiga and I already own a half Meg memory card which lives there, could I buy a cable to connect the expansion to the left expansion port?

Also the emulator provides 1 MB of memory, the computer has a half plus my expansion – would that give a total of 2 MB? Would I need a fatter Agnus and 1.3 ROMs or would it work on my 1.2 machine?

S Jackson, Richmond

Connecting RAM to the left side expansion port requires some complex circuitry, so that's unlikely to work. Sorry. You may be able to fit the actual DRAM chips into a different memory expansion, but usually they are soldered onto half Meg expansion boards so again it's probably not a viable option.

NO CAN PRINT

I am trying to print a list of all directories and files to my printer. Reading through the A500 manual it would appear that the best way to do this is to redirect the output of the command...

```
DIR OPT A
```

...to file. So I tried:-

```
DIR DIRECTLIST>OPT A
```

Which yielded 'bad arguments'. What am I doing wrong? I have tried changing the file name, creating the file first and exchanging the position of the commands but nothing seems to do the trick.

Mark Perkins, Poole

Clear as mud, isn't it? You need to redirect the output of DIR to the printer, which every Amiga thinks of as PRT:. So try this:-

```
DIR > PRT:
```

ANY OFFERS?

Way back in Amiga Format 9, you had in your magazine a 'Stand Alone Notepad'. I was intrigued so I went to work on it and just like many other people I kept on having 'Object Not Found' appear on the screen. I was so frustrated, but I had to wait for the following month's issue to find out if there was a problem.

Sure enough there were two errors, so I had another go and I still couldn't get it to work! In a temper I promptly went down to my newsagent and cancelled my copy of your magazine.

I've regretted this ever since, and now buy it randomly. Please, can you let me know if there were further errors in this nice little feature.
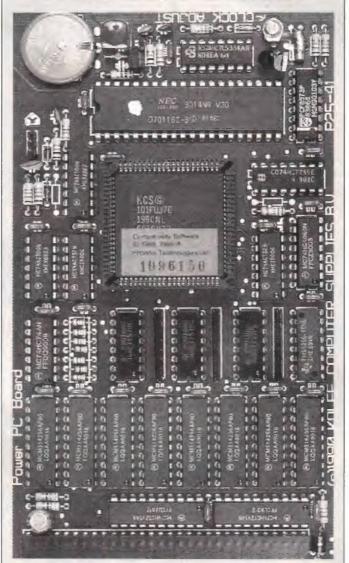
Peter Ley, Cardiff

You bet. Lots of readers have complained to us about this, and as it was also copied down verbatim in "Get The Most Out Of Your Amiga" (and it was wrong yet again) I think that some redress is called for.

So, if you reckon that you are a bit of a whizz with the Shell and reckon you can write a batch file to make a disk that's a bootable Stand Alone Notepad. Get them in to me at Workbench — a printout or hand-written copy is fine, because I'll be checking them all anyway.

The entry deemed to be the best will get printed and will win a £50 mail-order voucher and a big wet girly kiss from all the readers who have been eagerly waiting for it all this time.

Dear Reader

Hi, there! This is Damien, your new editor, speaking. We are now cruising at a circulation of about 100,000 and I've got something to say. Fasten your safety-belts and extinguish all cigarettes.

This is a big magazine, but frankly it's just not big enough. As your questionnaires flood in, we're learning more about how you want us to use the limited space. Expect next issue's Letters pages to be crammed to the seams with your ideas on the mag as extracted from the questionnaires.

Now, it seems you all enjoy writing letters and reading other people's opinions, but we just don't have the room for too much of it: so I'm cutting the Letters pages down from four to three. Severe, huh?

At the same time, we'll have less long letters and more short extracts, so that lots more people get a say. What do you think? Does that sound reasonable? We might even devote a page or so to longer pieces written by readers... called "Your Say" or something similar. Preferably, thinking about it, something less tedious and inane than that. Would you even have anything to say? Again, let us know.

A Good Idea

PRIZE *Letter*

With 1991 having dawned, we are left with the aftermath of the Christmas games rush. There were the good — *Power Monger*, *Gettysburg* — the bad — remaining nameless — and the non-arrivals — *UMS II*.

No doubt all this has lined the pockets of software companies with gold. During the festive season, however, not one really spared a thought for the less fortunate people in our society — many of these didn't have as good a Christmas as they might have done and the companies, if they really tried, could make their lives less miserable.

I am, of course, talking about charity compilations, which at present are extinct on the Amiga. Way back in the 8-bit 'good old days' several such compilations were released and they sold very well indeed. Not only did companies group together with their collections, they helped a worthwhile cause by selling their

Letters

All your comments, requests, questions, opinions, humour and utter drivel — there's just not space for it! Some of you produce intelligent, well-crafted arguments and some of you talk nonsense — but we're always interested to hear from you. Send your contributions to **Letters, Amiga Format, 30 Monmouth Street, Bath BA1 2BW.**

merchandise and gained a much better name for themselves.

**Stuart Hardy
Wales, Sheffield**

Very much in the spirit of Band Aid, Comic Relief and the like, I reckon this is a cracking idea and Stuart thoroughly deserves a prize for mentioning it. What do you think, software companies?

Stop Moaning

The Amiga is an unbeatable machine, be thankful that you've got one. The quality of software of all categories is outstanding (though there is the odd turkey). The Amiga has a ridiculous amount of features for an equally ridiculous price. How then can you say you're not satisfied?

32 colours, four-channel stereo sound, multi-tasking, even upgradable to 1 Mb for £30. That's nothing, even when compared to chicken feed. Have you seen the price (and the lack of availability) for the equivalent bit of equipment on the ST? What more do you people want?

Once upon a time (was it really only 1985?) an Opus disk drive for my Beeb was a huge £300. For a disk drive! You can get a whole Amiga for that now.

As for the price and quality of software (games in particular, the only reason I bought my Amiga) I am quite happy to pay £20+ for a game that I will enjoy, but I don't because I am a member of Special Reserve. If you want to rush out and squander your money on a game you've not even read a review of, that's up to you.

A fool and his money are very soon parted.

So far, all the Amiga games I have seen (even budget) have knocked me nearly speechless, both in the graphics and audio departments. Anyway, you've got no excuses. Just leafing through the magazine I found an advert for a company offering cut price software, and then offering to buy it back for half its value when you're sick of it. As far as I am concerned, I shall be buying Rocket Ranger for £7.99 and I eagerly await *Beast III* and *Golden Axe II*.

**Andy Blake
Bath**

Phew! there's a man that isn't afraid of speaking his mind! Still, it raises some interesting points about the power-to-money ratio of the Amiga. Anyone else got any views on these moans about the Amiga? Hang on, here's two...

Paranoia Pt 1

Is my Amiga (bless its cotton socks) on its way out as the best machine? I have been present on two occasions at a local computer shop when someone has asked for a computer that is good on games and business ware. Then they take them right past the Amiga to the Atari STE.

**K A Stacey
Bournemouth**

Paranoia Pt 2

I have noticed in the Letters pages that there seems to be a large interest in the possibility of the Amiga being redundant or replaced in the near future. I

personally see no decline in the devotion to the machine by either the programmers who make the games or the owners who buy them.

Doesn't this indicate that the only thing worth worrying about is people spreading these defeatist rumours about their machines via the Letters pages of magazines such as yours?

**Rob Gabriel
Uffculme, Devon**

I don't think you can argue with the fact that the Amiga is the best home computer around and will remain so for several years yet. Let's see what Commodore have to say about how big it is...

At Christmas, says a recent Commodore press release, the shops couldn't get hold of as many Amigas as people wanted to buy, but all the same 140,000 were sold. This means there are now more than 600,000 Amigas in the UK. "We expect demand of the Amiga to continue — overall it will remain the flagship product for leisure computing" comments Commodore's Kelly Sumner. "Also from the increase in peripheral sales — hard disks and RAM expansions — it is clear that Amiga users are becoming more and more sophisticated."

The Amiga is such a powerful computer that programmers are only beginning to get to grips with its potential. Over the next few years, you are going to discover that you are the proud owner of the biggest and most sophisticated computer around — as well as being a reader of the biggest

and most sophisticated Amiga magazine there is.

PD Cheats?

When is Public Domain not Public Domain? When Softville PD are "Exclusive distributors of the famous United Graphic Artists collection."

Why is this? Surely this undermines the principle of PD. Such titles should be freely distributed and should only be charged a reasonable copying fee.

Richard Bemrose
Bath, Avon

I think what Softville want to do with UGA stuff is make real, quality PD into a kind of very cheap commercial software, so that the programmers get a bit of cash back for the effort they put in. This makes sense when you think that with 'Licenseware', where you are supposed to pay a fee, people very often don't. Isn't that fair enough? On a similar topic...

Shareware? Where?

I never knew that people had to pay a donation to the author of the program. Is this absolutely

necessary and, if it is, how much do you have to pay? How do you know whether the piece is Shareware or not?

Tom Mason
Boughton, Northants

About the only restriction imposed on the copying of PD software is that the 'read me' documentation must always accompany it. In here it will say whether the program is theoretically Shareware and if the author expects a fee. Generally, the author doesn't really expect huge amounts of cash to come flooding in: but if you find his program incredibly useful or enjoyable, he'd consider it only reasonable to expect you to send a small donation to help him to carry on with similar work.

Crap Tip 1

Replace the ball of your mouse with a large, well-sucked gobstopper. This not only provides superior traction, but also picks up any stray hairs which may be on your mouse mat.

Clive Beale
Birkenhead

Thanks Clive

Keen to Learn

I am reaching the age of 16 and I am looking to the future. I am very interested in computers in general and I am getting a tired of dead ends as nobody seems to be listening. I am very good at keyboard skills and programming but I am very keen to learn more.

The subjects I have taken for GCSE are: Commerce, Maths, Typewriting, English, French, Religious Education, Geography, Chemistry and Physics and I am on course for getting Grade C in most of the main subjects.

I have contacted colleges and the sixth form and all they can seem to offer me are National Diplomas in Business Studies and Computer Studies — should I take these or are there some better ones?

John Webb
Mansfield, Notts

This is tricky, most people who get anywhere in computing get there because they know what they want to do and do it. Games programmers, for instance, have learnt what they know from teaching themselves in their spare time and putting it into practice.

At the same time, any experience from further education is bound to help. You are likely to find a computer studies course a little bit tedious at this level. I'd advise you to stay on at sixth form level, get a couple of A Levels (preferably including Maths and Physics) and continue your interest in programming at home. You should then aim to do some kind of computer science course at polytechnic, university or college when you are 18. This will be much more interesting.

Many of the computer prof essionals I know are graduates, often in entirely irrelevant subjects like English or Microbiology, but all of them are doing what they do because they are keen, interested and experienced, not because they have bits of paper to prove it.

Lots of people ask this question and I hope this helps, but I'd be very keen to hear from anyone who gives careers guidance in this area and can make any other useful suggestions.

Half Meg News

I think you should include a small section at the end of each review

stating such things as memory restrictions and the presence of a save game facility. This is vitally important in some games, especially those which take you hours to get anywhere, like *Rocket Ranger*, *Voyager* and *Paradroid '90* to name a few.

Stuart Hardy
Wales, Sheffield

Hang on, I'll ask Trenton... Right, he says that with any games that need a whole meg to work, or that have less features on a half-meg mechine, we'll mention it in the text anyway. As for save games and passwords, he reckons that generally these are an accepted part of a game and he'll only mention them if the system used in a game is particularly poor. Well, I reckon that if you, the readers, would find it useful, some mention of these would be handy. Anyone else got any ideas of things we ought to mention on games pages?

I've Got an Idea!

I have had this brainwave. I think you should have a small box at the end of each review stating things such as: value for money; memory required; number of levels; hours to complete.

Bradley Long
Middleton on Sea

How do we award a score for-value for money? Would we say 'we think it is worth £22.47', or would we give a percentage? Isn't a percentage very much like the 'Overall' rating we have already? Where's Middleton on Sea? It sounds boring, like something out of Dad's Army.

Talking Computers

While watching the all-time classic film *Ferris Bueller's Day Off* for about the 50th time yesterday, I wondered whether there is a program on the Amiga that emulates the same sort of sounds that he has on his computer, ie barfing, coughing, sneezing, snoring etc.

Bradley Long
Middleton on Sea

PS Middleton on Sea is a happening village near Bognor Regis.

We have a similar program on our Macs (or did have until the network manager told us off). What it

is, is a little sample player that plays samples of those sounds you are talking about. Our Mac version triggered the samples when you did certain things: like when you shut mine down, Arnie Schwarzenegger said "I'll be back!" We don't know of a simple little sample player like this for the Amiga: does anyone else?

Meg-a Good

I read somewhere that, as a rule, 54% of people own a 1 Meg machine. Software companies ought to be encouraged, through sales, to use this memory as Electronic Arts seem to be doing.

Nick Elkin
Taunton

When the results of last issue's questionnaire are analysed, we should be able to tell how many of you already have a RAM expansion, along with other valuable and interesting facts. That'll have to wait, though, 'cos Trenton's just trashed another MiG 29...

How do you do it?

I am working on a project at school for GCSE on Desk Top

Publishing and would like to know if you use PCs and home computers to create your magazine.

Ian Radcliffe
Stevenage

Trenton, Pat and Maff write the words (using Protext) and grab pictures on Amiga 500s. We use a 2000 to manipulate the pictures (Deluxe Paint) and then we transfer words and pics to PC (MS-DOS, that is) disks using CrossDOS.

These disks can be read by the Macintosh SE/30s that Damien and Gary use, where the words are translated to a Mac word processing program (MacWrite) and the pictures are translated from Amiga IFF to Mac PICT2 format. Words and pictures are then pulled into a Mac DTP program (QuarkXPress) and the pages are laid out on colour Macintoshes by Frank and Marcus. So if you think Amigas and Macs are home computers, then yes.

Ultimate question

Is there a version of The *Ultimate Ride* with manual-change gears?

Please tell me if there is and, if not, are Mindscape going to bring one out at all?

William Backen
Bournemouth

You get an option on the original version to choose between manual and automatic gears, so 'Mad Biker' McDonald tells me. What made you think you didn't?

Wot 64 Emulator?

In the November Issue, on the article about the ST emulator, you said "It's long been possible to run Spectrum, C64, BBC, PC and Mac software on the Amiga..." Could you tell me where I can get the C64 emulator from, what it costs and what it is called and is a C128 emulator in the pipeline?

Jeremy Cooper
Cheltenham

Errm... you can't, it doesn't, there isn't. This is a case of over-enthusiasm on the part of an emulator-obsessed freelance writer: mind you, there used to be a C64 emulator but it wasn't very good and it died out a few years ago. Speaking of which...

Wot Spectrum Emulator?

In the review of the Medusa ST emulator it was mentioned that it has long been possible to run Spectrum software on the Amiga. Having read in another magazine that it was to be launched, I have since heard no more of the mythical beast.

Sir Clive Sinclair
Runcorn

Not the Clive Sinclair? Naah, I bet you're not even a Clive Sinclair. Well, the infamous Spectrum emulator was on its way from an arguably insane person in Italy, but never quite made it. Still, would you really want one? Let us know if you do.

Crap Tip 2

Be sure to wear your mother's washing-up gloves when sitting down to a long keyboard session. This will help to prevent your fingers slipping off the keys, thus reducing typnig errord. (I sometimes wear her underwear also, but this is just a personal preference of mine).

C Beale
Merseyside

Jesus, Saves!

After purchasing the January edition Christmas special (original idea) and trying out the complete *Interphase* game I was as happy as a sand boy in a rather large sand pit: that is, well until I had to stop...

Hang on a second, Stuart Combs of East Grinstead, I know what you're going to say. You see...

OK, I'll accept the dumbo of the month award, if only you'll tell me why every time I try and save *Interphase*...

Whoa! If you'll just give me a moment, Frustrated of Portland, I'll tell you...

I was particularly impressed by the January 1991 issue and the wonderful free game *Interphase*, but... wait for it...

No, you wait for it, John Rose of Edinburgh! I'm just trying to explain... oh no, here comes Terry Cullen of Hockley...

I am not really a 'games nut' but I must say, I have got interested in

Interphase as supplied on your Jan Coverdisk. It's interesting and varied without all this alien-zapping stuff that, personally, bores me to tears. BUT...

Aaagh! It's that 'but...' again. Yes, Terry, I was just trying to tell everyone that what happened was...

We have an Amiga 500 with A501 0.5 Meg internal expansion. Recently purchased *AF* 18. Excellent value for money mag with absorbing and entertaining *Interphase* game. But...

RIGHT! THAT'S ENOUGH! I don't care if you are writing on behalf of the 'Pioli Family', David, or even if the whole of the Cheshire Mafia has a hit out on me! Please let me explain what happened to Interphase!

Seriously, though: the complete and very excellent game Interphase *that we gave away on the second disk on our Xmas edition suffered from a small bug. If you read Issue 19, the one with the lurid pink and green cover, you may well have seen the explanation we gave...*

If not — and why didn't you buy Amiga Format Issue 19? — what happened was that Mirrorsoft sent us a copy-protected master that we couldn't copy, so we screamed, panicked and asked Adrian Stephens, the author of Interphase, who lives just around the corner in Bristol, to get us a master. He did, but it was not quite kosher.

The problem is that when you go to save a game, it tells you that the disk you have just formatted to save your game on needs formatting. Bloody irritating, as many of you found out. Sorry!

The solution is to run the little program on this month's Coverdisk, which will cure your Interphase disk for good. Again, many apologies for the mistake and many thanks to all of you for your great patience when calling or writing about this problem. You're all stars!

Cookies, Dude!

It saddens me a great deal to find that a fine, upstanding publication such as yours should be desparate enough to print such a glaring inaccuracy. Everyone should know that the word

'Cowabunga' was coined by yours truly (ie me) on the Christmas Eve edition of Sesame Street, filmed in 1979.

**Yours Disgustedly,
Cookie Monster**

Sorry, Cookie Monster. I am one of your greatest fans.

Crap Tip 3

Stick a two-inch wide piece of masking tape across the top of the screen of your monitor or TV. Then, when that old spoils-port Mr Guru Meditation pops up, you are able to carry on undisturbed.

**Mr Beale
Wirral**

A3000 Insight

PRIZE *Letter*

The last thing my Amiga 500 ever said to me was "FFZZZZZZT". Charming I thought! Having saved long and hard, and wanting to

expand my horizons in graphic art etc, I invested in the new 3000 25Mhz 100Mb machine (once you've owned an Amiga, nothing else will do!).

The new machine is wonderful. Now all I need to (go on!) make my day is a bit of news about 3000 hardware and software in the hallowed pages of Amiga Format. I realise that there are not many 3000 owners as yet, and those that are may be 'serious' users who might not read Amiga Format (more fool them!), but are there any plans for more Amiga 3000 news? (Even one page would do me!).

To get the ball rolling, and so that owners of other machines don't feel jaded, here are a few 3000 gripes.

1. The 3000 is shipped as a '2 Meg' machine. Well, Kickstart 2.0 is loaded into 512K of my fast ram, and my eight-colour WB 2.0 takes another 250K or so, leaving me about 1.2 Mb, not far beyond a typical 500! (I understand Kickstart will be available on ROM later, but when?!)

2. Workbench 2.0 is great, but

has several bugs, not least the inability to refresh the screen properly at times. I can't wait for Wb 2.1.

3. 95% of my games collection (yes, I like to play as well) refuses to load on the 3000. I know there are many reasons why, but it's a real pain. If software (games and serious) could be labelled accordingly, eg, 'Runs on ALL Amiga's — no trubs!' or 'Croaks at the thought of a 68030 chip!', it would save an awful lot of grief.

4. DF0: STILL CLICKS WHEN EMPTY... ARRRGGGHHH!!!!!!!

My advice to anyone thinking of buying a 3000 is go ahead and do it! It knocks the spots off a 286 or 386SX PC! Having said that, if you like games, keep hold of your old Amiga 500, mine is being repaired.

**Robin
Shoreham-on-Sea**

Well said. We'll be taking a proper look at the Amiga 3000 in the next issue, so any views from people who already have one would be of interest.

MEDITATION

GURU'S

NEXT MONTH

Remember to look out for the April issue, out on the shelves on Thusday 14th March, because it will be hiding inside a special wallet. Snuggling cosily up to your usual massive issue of Britain's biggest-selling Amiga magazine you will find a special 32-page sneak preview of a brand new magazine for serious Amiga owners. The supplement will include a heap of hints, tips and reviews along with the most complete disk-drive round-up ever seen. Meanwhile, Amiga Format will feature a Graphics special with a huge range of advice and tutorials, plus comparisons of digitisers and scanners. As usual, it'll sell out: so get to your newsagent early to avoid disappointment!

COMPO WINNERS

Listen, sorry about this, but there's just not room to print all 163 compo winners from the Jan issue here. You will all get a mention next month in an extended Guru Competition Special. See you then!

All change at Amiga Format!

In a bloody coup over Christmas, *Amiga Format* has overthrown tyrannical Editor Bob Wade and placed Dep Ed Damien 'Benign Dictator' Noonan on the throne. Another victim of the revolution was gorgeous Art Assistant Paul 'Hunk' Morgan (42), who 'got in the way'. Oh all right then, it's a lie. Bob's gone to edit the brand-new 'magazine that's serious about your Amiga' and Paul has been promoted to Art Editor of sister mag *Amstrad Action*. Best of luck to them both, and to the very capable Frank 'Family Man' Bartucca who takes over Paul's job. Paul Morgan is actually 16. Damien is, however, a dictator.
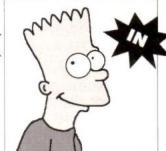
OUT
Bob Wade
Gone to edit new Amiga mag.

OUT
Paul Morgan Promoted to Art Genius of *Amstrad Action*.

IN
Damien Noonan
Now Editor of *Amiga Format*.

IN
Frank Bartucca
New *AF* Art deputy hero.

ADVERTISER'S INDEX

Warlock THE AVENGER

CLASSIC ARCADE ACTION IN A LAND OF MYTH AND MAGIC

In the beginning there was 'Druid', hailed as a milestone game at the time of its release. Then came 'Enlightenment', and now there's **Warlock** *the avenger*, the third game in a classic series. Designed by Dene Carter, **Warlock** *the avenger* takes the player yet deeper into the dangerous world of Belorn, where the evil lord *Acamantor* has returned to hold the land in his grasp. Strive to reawaken your ancient spells and find your way through eight trap-strewn dungeons, overcoming unknown obstacles, locating secret passage-ways and keeping

Acamantor's monstrous minions at bay. Your task is to find and destroy the evil power. Only by unleashing the arcane power of Chaos can final victory be yours.

- two games in one, you get the original *Druid* game, included **free**.
- use elemental forces to cast the most effective spells
- create *Golems* and work together in the two player game
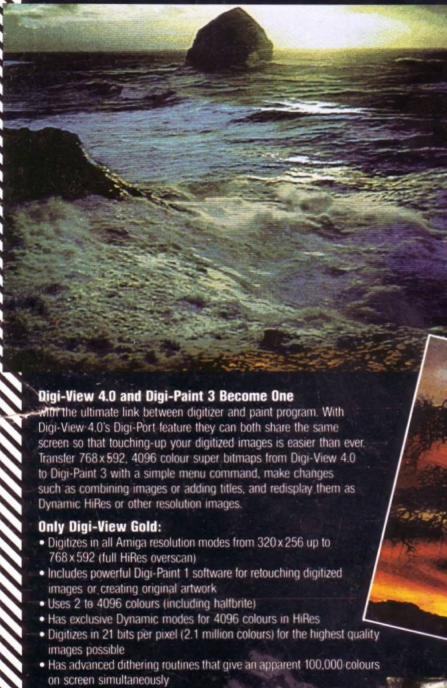- avoid gigantic fire-spitting skulls and *Acamantor's* teeming army of monsters

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AMIGA	£24.99
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